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EDITOR'S

COMMENTS

WE begin this issue with John H. Gilchrist's *Latitude Errors and the New England Voyages of the* Pring *and* Waymouth. This article makes it clear that in the late sixteenth and early seventeenth centuries English navigators, contrary to many experts, were much more able to determine proper latitudes on their cross-Atlantic voyages. We follow with a piece by James B. Lynch, Jr. on *Edmund Custis and His "Wreck-Fishing" Invention*. This piece tells of an invention by Edmund Custis in the late seventeenth century for the salvaging of ships and their cargoes off the coasts of the British Isles and overseas. This invention, while relied in no small measure on use of underwater explosions seems to have been relatively successful, but led to litigation when used in recovery of cargoes off Newcastle in the 1670s. Present day underwater archaeologists then did have predecessors.

We then proceed to *Sea Power and South America: The "Brazils" or South American Station of the Royal Navy 1808-1837* by Barry M. Gough which tells of how Britain maintained an important squadron in South American waters during the first half of the nineteenth century. This squadron was concerned not only with protecting British interests in newly freed South American countries, but with the suppression of the slave trade and much else. Its role in asserting British rule over the Falkland Islands was crucial to a dispute that had lingered on into the late twentieth century.

Our next article is a brief one by Tom H. Inkster entitled *Voyage to Canada's Arctic Islands*. This tells a story of a voyage along the Northwest Passage route from Greenland to Alaska on the *Nascopie* and what befell the author on this trip. Then the scene changes to World War II and one of the most desperate battles to assure convoy passages across the submarine infested waters. This is told in an article written by David Syrett entitled *The Battle for Convoy TM 1, January 1943*. Better coordination would be needed and air cover provided before convoys such as this could make successful crossings of the stormy Atlantic.

We then close with two more offerings. The first is Paolo E. Coletta's *Creating the U.S. Bureau of Aeronautics* an important event in the development of U.S. naval aviation, and then Evan Randolph's identification of a vessel in one of the important maritime paintings of the Roux family painters. After this we close with a number of important book reviews.

We cannot, however, end these comments without expressing our sorrow at the recent passing of Dr. E. Kenneth Haviland of Baltimore, Maryland. His articles and book reviews have graced *The American Neptune* for many years and we will never find anyone again so knowledgeable about nineteenth century shipping on the Yangste.

ARCHIBALD R. LEWIS

Salem, MA

We regret to report the death of Dr. Archibald R. Lewis on February 4, 1990. Subscribers and contributors alike share a deep sense of loss with Dr. Lewis' family and his extensive circle of colleagues. We are indebted to him for his efforts and commitment to America's oldest scholarly journal of maritime history. It was his hope to celebrate the 50th anniversary of *The American Neptune* next year by spearheading an endowment drive to insure the continuance and improvement of the journal.

Peter Fetchko
Salem, MA

Latitude Errors and the New England Voyages of Pring and Waymouth

JOHN H. GILCHRIST

A SURVEY of secondary sources dealing with navigational latitude determinations in the sixteenth and early seventeenth centuries discloses assumed mean errors of no less than ½° and frequently of 1° or more. An exception is Ganong, who ascribes a mean error, based on Champlain's observations, of 20′ and a range of 1′ to 40′ in the early 1600s.[1] Early in the twentieth century, he also compiled a number of latitude errors of Cartier and Alfonse,[2] the most comprehensive survey of the subject since Slafter's excellent study a generation earlier of the incorrect latitudes of Atlantic Coast explorers in North America between 1535 and 1740.[3]

Slafter's survey, on which Ganong drew for his own, details 33 mostly shipboard latitude errors from Cartier to Josselyn in 1675, the vast majority of which (i.e., Cartier, Alfonse and Champlain) apply to the present study. The average error in Slafter's group was just over 15′, rather better than Ganong's, and ranging from 2′ to 40′. Even with so modest an average error, Slafter surprisingly insisted that such latitude readings reflected guesswork "at best" by the navigator or pilot, on the ground that one degree occupied a space of only a tenth of an inch on the scale of the mariner's astrolabe or cross-staff, rendering almost impossible the intelligible subdivision of a degree into quarters, let alone sixths. Yet by the middle of the time span with which Slafter concerned himself, John Davis had perfected his backstaff (in excellence "above all other instruments to satisfie the Seamans expectation . . ."[4]) to the point where he could claim the "shortest degree" was 1¾″ long,[5] which, notwithstanding the array of errors extrinsic to the instrument, could comfortably accommodate subdivisions of 5′. And even though most of Slafter's data derive from French navigators relying almost entirely on the astrolabe, thus confining a degree to 1/10″, the average error he acknowledges scarcely seems attributable, for whatever reason, to sheer guesswork.

Like-minded, if more recent, entrants in the field of judging latitude accuracy include Quinn, who, referring to the Columbian period, quite rightly ascribes readings good to within ½° at sea to "good fortune," whereas others as likely to err by 2°.[6] In that same era, Brown, however, cites one of Cabral's pilots as reporting that latitude errors* of 4° or 5° were virtually the rule.[7] As we shall see, barely two decades later Magellan's navigator Albo would improve on that to an astonishing degree, presaging the new century's competence in shipboard sightings of the sun and stars. Cabrillo's unfortunate habit of getting latitudes 1½° too high was an exception that almost proved the rule. Albo's readings may well have reflected an early use of the cross-staff, which, among the Portuguese as well

1. William Francis Ganong, preface to his translation of *Voyages*, in *The Works of Samuel de Champlain* (Toronto, 1922), vol. I.

2. William Francis Ganong, *Crucial Maps in the Early Cartography of Canada* (Toronto, 1964), p. 292.

3. Edmund F. Slafter, *History and Causes of the Incorrect Latitudes . . .* New England Historical and Genealogical Register, April 1882, vol. XXXVI, pp. 145-56.

4. John Davis, *The Seamans Secrets*, in A. H. Markham, *The Voyages and Works of John Davis* (New York, n.d.), p. 333 f.

* Using the astrolabe. The cross-staff did not come into general use among Continental mariners until well into the sixteenth century. And in any kind of seaway, gross discrepancies with open-sight instruments were inevitable as late as the mid-seventeenth century.

5. Markham, *The Voyages . . .*, p. 333.

6. D. B. Quinn, *North America from Earliest Discovery to First Settlements* (New York, 1977), p. 79.

7. L. A. Brown, *The Story of Maps* (New York, 1977), p. 181.

as the English somewhat later, came to supplant both the mariner's astrolabe and quadrant,[8] on which Columbus had relied without achieving notable accuracy.[9]

Indeed, the French and later Tudor voyagers built upon the Portuguese craft of celestial navigation in ways that would forever change the latitude-finding art, as will presently be seen. This development has not always been acknowledged, except by Slafter and Ganong, in the generalizations about sighting accuracy found in more recent chroniclers of shipboard navigation. Land based latitude findings as early as 1480, it is true, have received their due, as exemplified by the earliest surviving ephemerides, "Regimento do Astrolabio et do Quadrante," whose readings Taylor credits with being "with few exceptions, correct to within ½°—often to 10′."[10] But to shipboard sightings, even late in the sixteenth century, she grants at best an accuracy of ½°—"at very best they might approximate to 15′."[11] Like Taylor, confining his estimation of accuracy to just the mariner and his instrument under optimum conditions at sea, Waters allows observations of not much better than ½°.[12] Parry, perhaps relying on Waters, says much the same thing,[13] whereas Morison, despite data he himself supplies for Frobisher and others, goes the length of asserting that shipboard latitudes were not "accurate within a degree . . . ."[14]

The clear implication of our modern historian's caveat that only "at best" and under ideal circumstances could even the late sixteenth century pilot, the officer most accomplished in matters of latitude observation and dead reckoning, achieve an accuracy of from ½° to 15′ seems to be that most of the data that have come down to us about which there is some question concerning precise landfalls in North America ought to be viewed with suspicion on the assumption that such determinations usually were made under less than optimum conditions. But a review of over 80 instances of latitude data for places that are clearly identifiable, from Magellan to Champlain and Gosnold, strongly suggests either that favorable conditions—i.e., at anchor in a quiet harbor, a flat calm at sea, or on shore—existed with surprising frequency, or that the more proficient pilots of the time somehow managed latitude observations on deck in a seaway with greater precision than we have been inclined to credit them.

Of the 94 latitude observations (Figs. 1 & 2) by Magellan, Verrazzano, Cartier, Alfonse, Frobisher, Davis, Drake, Gosnold and Champlain, at least 16 and perhaps many more were made at sea. Few of these disclose inaccuracies notably different from those known, or presumed, to have been taken ashore.

These data, while too irregular and probably too biassed a sample of the universe of sixteenth/early seventeenth century latitude determinations to yield a statistically normal distribution, nevertheless reveal considerably more information about maritime latitude competence than historians of the discovery period have recognized. The relatively modest sampling for the four English explorers (Fig. 2) is presented separately for two reasons: to see whether the English as a group disclosed latitude competence significantly different from their maritime contemporaries on the Continent; and to supply a data base that offers a guide to the geographical significance of other English latitude figures, like those of Martin Pring and George Waymouth on the New England coast, that for the past 100 years have inspired premature interpretation.

The skewed latitude distribution for Magellan et al. (Fig. 1) attests, as was said, to a biassed sample, even though a large one (n = 71). Nevertheless, it discloses a mean error—+0.7′—remarkably close to 0 and a central tendency, measured by the standard deviation, permitting the inference that 95% of the population represented by the sample would incur errors between −49′ and +51′, or less than a degree away from correct latitude. Owing to the large contribution by Alfonse, evidently less accomplished with the astrolabe than his nearest contemporary, Cartier, the mean average error (plus *or* minus) of 17.5′ is rather high and accounts in large measure for the "fatness" of the distribution curve. All the same, this error, together with the probability limits mentioned, represents a substantial improvement over the "standard" latitude error of ½° or more assumed by many of the authorities cited earlier for the sixteenth and early seventeenth centuries.

8. E. G. R. Taylor, *The Haven-Finding Art* (New York, 1957), pp. 174-5.

9. S. E. Morison, *The European Discovery of America, the Southern Voyages* (New York, 1974), pp. 145, 175.

10. Taylor, *The Haven- . . . .*, pp. 162, 166.

11. Taylor, *The Haven- . . . .*, p. 215.

12. D. W. Waters, *Art of Navigation in England in Elizabethan and Early Tudor Times* (London, 1958), pp. 52, 57.

13. J. H. Parry, *The Age of Reconnaissance* (New York, 1964), p. 115.

14. Morison, *The European Discovery of America, the Northern Voyages* (New York, 1971), pp. 153, 610.

FIGURE 1
INCIDENCE OF LATITUDE ERRORS—EUROPEAN EXPLORERS

	No. of rdgs.	Avg. error
Magellan	6	8.7′
Verrazzano	2	21.5′
Cartier	12	17.4′
Alfonse	31	21.0′
Champlain	20	14.5′

n = 71
$\bar{x}$ = +0.7′
SD = 22.7′
SEM = 2.7′
Mean avg. error = 17.5′

Using t test, 95% probability ($P < 0.05$) that *population* mean will fall within $\bar{x} \pm 2$(SEM), or −4.7′ to +6.1′. Corresponding latitude error range: $\bar{x} \pm 1.96$(SD), or −49′ to +51′.

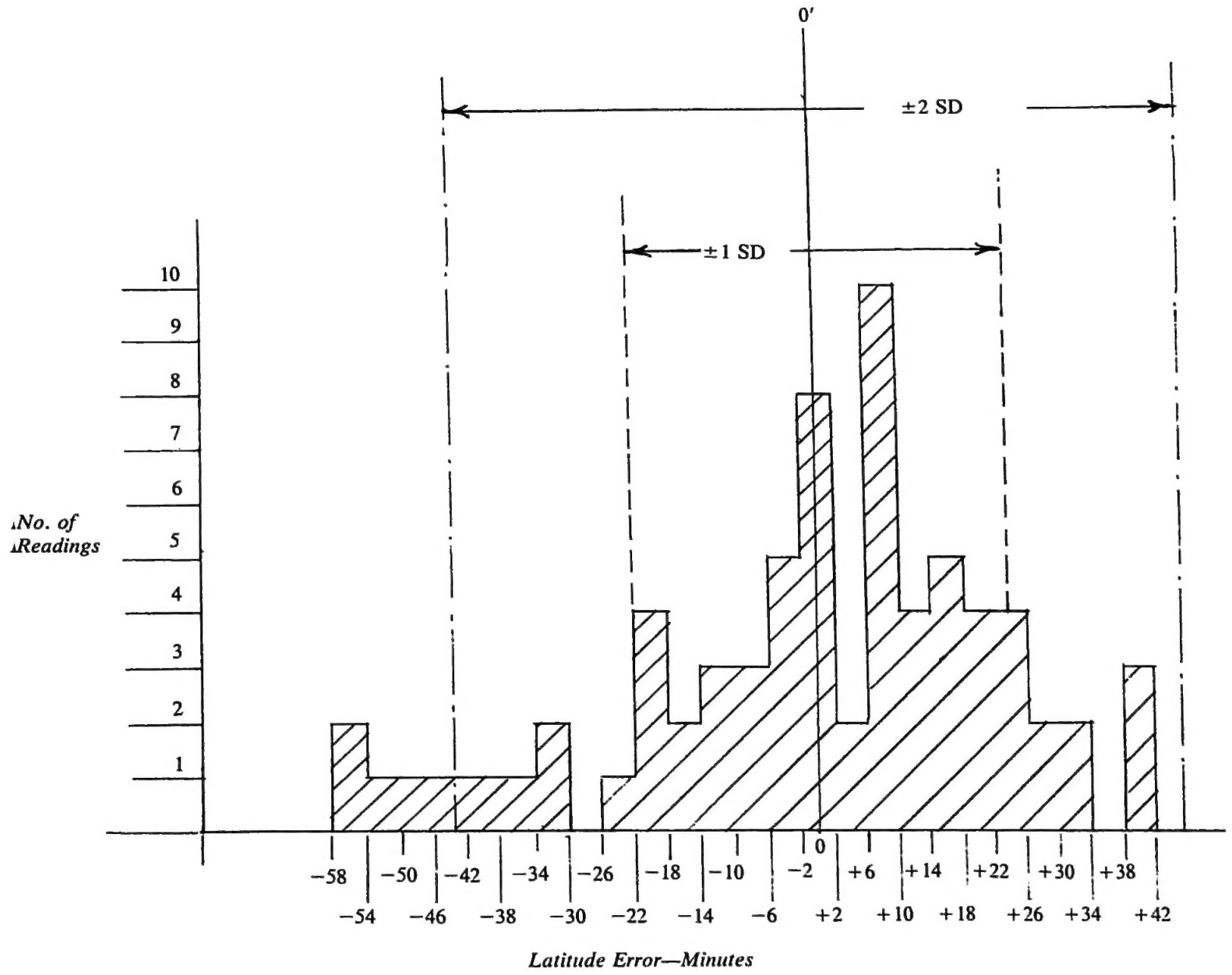
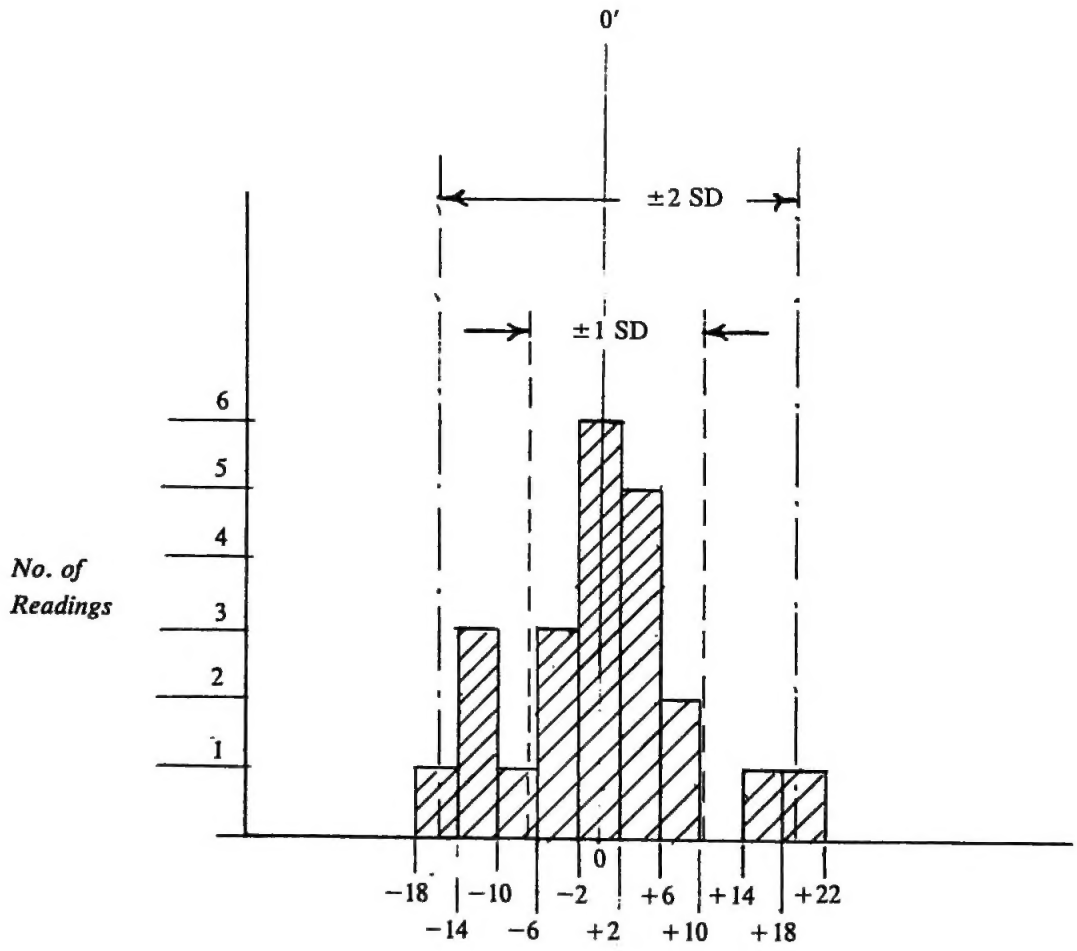


FIGURE 2
INCIDENCE OF LATITUDE ERRORS—ENGLISH EXPLORERS

	No. of rdgs.	Avg. error
Frobisher	5	6.2′
Davis	12	5.8′
Gosnold	4	7.8′
Drake	2	8.5′

n = 23
$\bar{x}$ = +1.5′
SD = 8.6′
SEM = 1.8′
Mean avg. error = 6.5′

Using t test, 95% probability ($P < 0.05$) that *population* mean will fall within $\bar{x} \pm 2.07$(SEM), or −2.2′ to +5.2′. Corresponding latitude error range: $\bar{x} \pm 2$(SD), or −19.4′ to +22.4′.



And what of the Englishmen, whose data (Fig. 2) are dominated by Frobisher and Davis working in much the same latitudes as the French? The northern latitudes might seem to favor the cross-staff (at least for solar sightings), which Frobisher probably and Davis certainly had, but the French including Champlain did not have. The distribution here is much tighter, more nearly approaching a Gaussian pattern. The average errors of the four explorers fall within a narrow range, yielding a mean of 6.5′ and a 95% probable population error range of from −20′ to +23′. These, on their face, are substantially better than for their Continental counterparts, with the rather surprising exception of Magellan. Even if the limited sample representing Davis et al. fails to qualify as a normal distribution, it offers convincing ground from which to assess the likely latitude errors of other Englishmen who followed close behind. In fact, the data permit us to think of a late sixteenth/early seventeenth century "standard" error in terms not of ½° but of something approximating a quarter as much, i.e., 7′ or 8′, perhaps 10′ at the outside.

Let us now examine the implications of these data for the New England voyages of Pring in 1603 and Waymouth in 1605.

* * *

The vanguard of new-century mariners to Norumbega was led by Bartholomew Gosnold. In 1602 he apparently fetched Casco Bay in Maine, sailed southwest to Cape Cod, which he rounded (and named), then landed on the mainland inside Cuttyhunk, shipping a huge cargo of sassafras.[15] Only the next year did Sir Walter Raleigh, now patentee of "Virginia" north (which included Penobscot) and south and possessor of exclusive rights therein, learn that Gosnold had violated his patent by visiting the New England coast.[16] But by then Raleigh's star was already fading. Four months after Elizabeth's death in March 1603, Sir Walter, out of favor with the new king, toppled "off his pinnacle and disappeared as a prisoner to the Tower." But not before sending his brother Gilbert to Virginia (south) in quest of the "lost" colony on Roanoke Island, and Martin Pring to New England for more sassafras, a voyage enthusiastically supported by Richard Hakluyt.*

"A Multitude of Small Isles"

Pring's command consisted of the ships *Speedwell* and *Discoverer*; De Costa has him making a landfall at Casco Bay,[17] where Pring sighted a number of islands—unsurprisingly—but no sassafras. However, he observed.

> . . . . very goodly grass and woods with tall oaks, beeches, pinetrees, firretrees . . . sundry sorts of beasts, as stags, deer, bears, wolves, foxes . . .[18]

Pring's landfall is certainly arguable. The account of June 1603 that Pring had written for Richard Hakluyt the younger (who was to cosponsor Pring's second New England voyage in 1606) says

> . . . we fell with a multitude of small Isles on the North Coast of Virginia, in the latitude of 43 degrees.[19]

Utilizing our new probability limits for latitude readings, the strongest likelihood is that Pring made landfall at the Isles of Shoals, near the entrance to the Piscataqua River. Allowing him the 95% limit, it is possible but less likely, especially in the absence of other island groups, that Pring's landfall was as far east as Cape Porpoise or as far west as Cape Ann. Sailing thence to ". . . the southwest end of these is-

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15. B. F. De Costa in Justin Winsor, *The Narrative and Critical History of America* (Boston & New York, 1884-89), vol. III, ch. VI. De Costa has Gosnold visiting Norumbega. Inasmuch as there is no evidence Gosnold saw Penobscot Bay (which, once seen, left an indelible impression on visitors from Gomez on), the presumption is that De Costa was using "Norumbega" to mean the entire New England coast, as it commonly did in the sixteenth century, though much less so in the seventeenth.

The dried bark of the root of the sassafras tree yields an aromatic oil that was much in demand in the Old World for treating various maladies.

16. Because Gosnold's voyage had been financed by prominent members of Elizabeth's court, Walter Raleigh, not wishing to create a public scandal by exposing its sponsorship, swallowed his annoyance at this infringement of his patent and granted his approval ex post facto, which appears on the title page of *A Brief and True Relation . . .* written by a member of the voyage and published later that year. Thus did the Queen's great courtier adroitly take credit for the first major English exploration of the "North Virginia" coast. G. P. Winship, ed., *Sailors Narratives of Voyages along the New England Coast, 1524-1624* (Boston, 1905), p. 32.

* Pring was frequently called the last Elizabethan seaman, as George Waymouth was the first Jacobean.

17. As does the twentieth century historian Henry Howe, who not only offers no evidence for his claim but reasons ex post facto that Pring landed there because "it was within a few miles of the landfall of Gosnold the year before." H. F. Howe, *Prologue to New England* (New York/Toronto, 1943), p. 68.

18. Samuel Purchas, *Pilgrimes* (Glasgow, 1906), vol. 18, p. 324.

19. Purchas, vol. 18, p. 323.

lands," Pring rode under one of the greatest, which "we named Foxe Island, because we found those kind of beasts thereon."[20]

Norman asserts that the "multitude of small" islands is *east* of Penobscot Bay, adding that the "Foxe Island" is perhaps North Haven or Vinalhaven, but offers no supporting evidence.[21] Despite the attractiveness of a possible association between the present Fox Islands and Martin Pring, he himself provides scant ground for supposing that *Speedwell* or *Discoverer* entered the Penobscot region at all.

Other twentieth century advocates of the Penobscot Bay landfall theory include Bolton, who is unspecific, and most recently D. B. Quinn, who champions the Bay on the curious ground that because the Maine coast has no islands within 43° ± 30′, the heretofore "standard" tolerance, Pring's stated latitude must have been quite wrong, leaving one free to pick any islands that resemble Pring's description.[22] Yet the islands of Penobscot Bay are more than 1½° north of 43°N; even Casco Bay is ¾° north of it, far exceeding our recently developed limits of probable latitude error.

Passing at length through the rest of the "small Isles," Pring rides among them in six to 12 fathoms, in due course reaching ". . . the Mayne land . . ," he continues,

> which lieth for a good space northeast and southwest . . . *in the latitude of 43 degrees and a half*, whereupon we ranged the same to the southwest.[23] (Italics added.)

Thus he struck the mainland ½° east of his landfall, putting him at or very near Saco Bay, where the coastline from Cape Ann to Cape Elizabeth *a fortiori* "lieth . . . northeast and southwest," an observation that could not apply to the east where the Maine coast lies decidedly east and west.

Again assuming a 10′ probable and a 23′ possible error, the probable limits of Pring's easterly ranging are Cape Porpoise and the western approach to Casco Bay, with the possible limits between Cape Neddick and the outer islands of Muscongus Bay. Next, dropping up the coast (i.e., proceeding southwest) to approximately 42½°N, he fetches four inlets; the easternmost, though barred, Pring ventures up five miles in good water; the following two, he reports, ". . . pierce not farre into the Land," whereas the fourth

> was the best, which we rowed up ten or twelve miles. In all these places we found no people, but signs of fires where they had been.[24]

The first inlet Pring describes as barred and navigable at least five miles up with deep water, which certainly characterizes the Merrimack River whose entrance is notorious for its perilous sandbars. But south of the Merrimack to Cape Cod Bay the only river qualifying for the fourth inlet is the Charles—no other is navigable "ten or twelve miles" from its mouth.

A recent suggestion that Pring's river excursions started with the Damariscotta and ended with a river in Casco or Saco Bay raises difficulties—not only is the Damariscotta not barred, but these rivers lie in excess of one degree of latitude north of where Pring says he discovered his inlets, which was about 42½°N, in the Boston/Cape Ann region. Moreover, if the Damariscotta *was* the first of his estuarial probes, Pring could hardly have overlooked the expansive Sheepscot as he proceeded westward.[25]

Finding no sassafras, Pring continued west to Cape Cod Bay, "which Captaine Gosnold over-shot the yeere before." Sassafras still eluding him, he ventured further westward, at last discovering a rich supply "on the South side" in latitude 41°25′.[26] Here he built a defensive barricade and harvested all the sassafras he could carry.

For virtually the past hundred years, the site of Pring's operations has been considered to be in the Elizabeth Islands (Cuttyhunk is at precisely 41°25′N latitude) or perhaps in the Falmouth area of the Cape's south shore. Pring's latitude, confidently given to the nearest 5′ and evidently taken on land, warrants a restriction of the probable error to ±10′, which would encompass possible sites from Nantucket almost to Hyannis. Yet Quinn, among others, largely on the evidence of the remnants of a primitive fort discovered by the Pilgrims on the Pamet River, is convinced that

20. Purchas, vol. 18, p. 323.

21. Charles Norman, *Discoverers of America* (New York, 1968), pp. 216-18.

22. D. B. Quinn, *The English New England Voyages, 1602-1608* (London: The Hakluyt Society, 1983), p. 216. Quinn has changed his allegiance. A decade ago he supported the more plausible choice of either Cape Elizabeth or Cape Neddick. See *England and the Discovery of America, 1481-1620* (New York, 1974), p. 425. C. K. Bolton, *The Real Founders of New England, 1602-1628* (Boston, 1929), p. 21.

23. Purchas, vol. 18, p. 324.

24. Purchas, vol. 18, p. 324.

25. Quinn, *The English . . .*, p. 216.

26. Purchas, pp. 324, 329.

Pring tarried near Provincetown, or perhaps Plymouth.[27] This would have placed the sassafras operations between 35′ and 40′ north of where Pring claimed to be, a state of affairs that our latitude studies have rendered highly unlikely.

The Penobscot Bay landfall premise probably originated with William D. Williamson early in the nineteenth century;[28] Bancroft perpetuated it and, as previously noted, it still has its proponents.[29] Not only does this construct violate Pring's latitude by over a degree, but the islands Penobscot Bay presents to the ocean—Isle au Haut and Vinalhaven—are neither multitudinous nor small, judged even by the Azores that Pring visited on his return. Yet the association of the Fox Islands with the explorer achieved respectability early in this century and continues in the good graces of historians.[30]

In summary, a new interpretation afforded by this study of English latitude readings at the turn of the seventeenth century suggests that it is unlikely Pring made landfall in Maine at all, and that his coastal peregrinations, bounded by lower Casco Bay to the east, reached the Elizabeth Islands to the west.

"Trending into the Maine": How True Was "A True Relation . . . ?"*

Two years later, when England's yen for sassafras had yielded to the need for overseas colonies, George Waymouth followed in Pring's wake to the New World, intending originally to proceed along the coast west from Cape Cod. The sixteenth-century interest in a northwesterly passage to the Spice Islands and China was displaced by the transatlantic imperial designs of Spain, France and England.

Waymouth's voyage, owing in large measure to the seductive detail with which James Rosier described their river explorations, has, as will be seen, occasioned a far livelier historical controversy than the more modest, and perhaps more faithfully recounted, peregrinations of Pring in similar waters. Although the narrative by Rosier vouchsafed us only one New England latitude reading of importance, our revised estimate of the accuracy of shipboard latitude determinations may confer a new significance on that solitary reading, especially in conjunction with cartographic evidence for Waymouth's having explored a river other than that with which he has been credited, the St. George.

No sooner had Pring returned from Norumbega in early October, 1603, than James VI of Scotland was crowned England's James I. Although virtually a foreigner to the scene, England's first Stuart ruler had the sagacity to heed the forebodings of his wily minister, Robert Cecil, concerning Catholic designs upon the crown. The new king also faced threats to monarchical episcopacy from two other quarters—nonconformists at home and Scottish Calvinists to the North. The Puritan minister Andrew Melville had publicly lectured the king

> I tell you, sir, there are two kings and two kingdoms in Scotland. There is Christ Jesus the King, and his kingdom the Kirk, whose subject James VI is, and of whose kingdom not a king, nor a lord, nor a head, but a member.[31]

His forbearance wearing thin, James resolved upon the most expeditious solution—colonize the North American coast as a haven for the Puritan rabble. The idea was enthusiastically adopted by Sir Ferdinando Gorges, who, until then, had been more concerned with finding salt water trading routes to Cathay than with New World colonization. Gorges was encouraged by news of Gosnold's and Pring's summer cruises to the Northeast coast, the first—in 1602—having been promoted by Arundell and Southampton on behalf of fellow Catholics seeking refuge from Anglican conformism.

George Waymouth was more than just the first Jacobean explorer; he was the first Englishman empowered by the throne to find a colony site in what Captain John Smith shortly would christen New England. But by

* *A true relation of the most prosperous voyage made this present yeare 1605, by Captain George Waymouth in the discovery of the land of Virginia*. Written by James Rosier.

27. Quinn, *North America* . . . , p. 393.

28. William D. Williamson, *History of the State of Maine* . . . . (Hallowell, 1832), vol. I, p. 186.

29. Williamson, *History* . . . , vol. I, p. 87.

30. H. S. Burrage, ed., *Early English and French Voyages, chiefly from Hakluyt, 1534-1608* (New York, 1906), p. 10. Later, in 1914, Burrage moderated his Fox Island stand, interpreting Pring's own reckoning of 43°N latitude as a probability of having reached—as distinct from making a landfall at—the Fox Islands Burrage, *The Beginnings of Colonial Maine, 1602-1658* (Portland: State of Maine, 1914), p. 25. For more recent adherents of the Penobscot Fox Islands landfall theory and Pring, see Norman, *Discoverers* . . . , pp. 216-18, Quinn, *England* . . . , p. 426.

31. John Fiske, *The Beginnings of New England* (Boston and New York, 1902), p. 82.

1605, New France, with a colony at Ste. Croix established the previous year, had invaded by several degrees of latitude the coastline probed by Gosnold and Pring, and in the person of Samuel de Champlain was already succeeding where Cartier and Roberval had failed.

New World stakes had grown enormously. Although with Lord Howard's defeat of the Armada Elizabeth had bequeathed to her successor freedom from Iberian threats at home and abroad, Henry of Navarre's aggressive interest in colonization together with James I's domestic pressures both Puritan and Catholic made it ever more necessary for England to seek a colonial foothold in *mundus novus*.

In 1605 Waymouth, jointly sponsored by Gorges and the Catholic peers, set out from Dartmouth on a *bona fide* search for a colony site. Heading for Cape Cod, *Archangel* met unfavorable winds and was compelled to make landfall at Monhegan.

While Waymouth and Rosier were taking exuberant note of the excellence with which nature had endowed the coast of Maine, Thomas Arundell, guiding force of the voyage, fell into royal disfavor along with other Catholic peers and fled the country. But Rosier's *A true relation . . .* , published before the year's end (1605), would inspire Gorges and Sir John Popham to seek colonizing patents from James I early the next year, resulting in the formation of the London and Plymouth companies empowered to establish a

> settled and well-ordered society, being authorized to coin money, impose taxes . . . and maintain a general government for twenty-one years.[32]

The fact that Henry of Navarre, barely two years before, had granted a patent to Sieur de Monts from 33° to 46°N in Acadia for much the same purpose did not deter James Stuart from issuing, much less Gorges and Popham from exercising, the Plymouth patent embracing the territory from 41° to 45°N latitudes.

Waymouth's literary travelling companion, James Rosier, left an account that generated speculation and occasionally heated controversy among scholars of the late Victorian era—what was the super river that so tried Rosier's resources of hyperbole and they claim to have ascended? Edmund Slafter, invaluable guide to the twists and turns detailed in Champlain's *Voyages*, summed up the arguments that still had standing in 1878 among historians of Northeast discovery. Of the Maine rivers once thought to resemble the *Relation*'s description, only the Kennebec, the St. George and the Penobscot survived as viable candidates for the "great River . . . trending . . . into the Maine . . . not much lesse than threescore miles." Slafter himself inclined toward the Kennebec,[33] as did his contemporaneous brother of the cloth, Rev. B. F. De Costa, who in fact had few doubts. Waymouth, he asseverates,

> explored the Kennebec, planting a cross at one of its upper reaches . . . sailing for England June 16 [1605] he carried with him 5 . . . Kennebec natives, whom he had taken by stratagem and force.[34]

But by the early twentieth century the St. George was in high favor, with only De Costa holding out for the Kennebec as the river Waymouth explored and Rosier described. The Penobscot school had faded in the mid-nineteenth century when it became clear that Rosier's account could not reasonably be construed as depicting the entrance to Penobscot Bay.

In his introduction to the Gorges Society edition of the *Relation*, Henry S. Burrage painstakingly examined the feud over where Waymouth went. Following a protracted exchange between De Costa for Kennebec and George Bancroft for St. George, Burrage declared St. George the winner. Writing at about the same time, James Phinney Baxter, Burrage's friend and fellow Portlander, believed that Rosier's record left no doubt that the "Bay" and "River" were, in fact, the modern St. George Harbor and River. And so to this day the St. George River is firmly entrenched in both the popular and scholarly literature as the scene of Waymouth's "Trending into the Maine." But a careful reevaluation of the *Relation*, including that of a key map prepared ca. 1610, discloses the conclusion based on the Baxter-Burrage consensus to be premature.

On what evidence to Bancroft, Baxter and the other St. Georgians rest their case? Let us examine those extracts from Rosier's *Relation* most relevant to the issue at hand. After a month and a half at sea, *Archangel* reached the Cape Cod shore ("latitude of 41 degrees and an halfe"); hoping to proceed south, she was forced by a southwesterly gale in the opposite direction, fetching Monhegan Island (the only entity to re-

32 De Costa in Winsor, *The Narrative . . .* , vol. III, p. 175.

33. Edmund Slafter, ed., *Voyages of Samuel de Champlain* (Boston, 1878-82), p. 92.

34. De Costa in Winsor, *The Narrative . . .* , vol. III, p. 175.

ceive the appellation "St. George") on May 17, 1605, whence Rosier reports seeing countless islands inshore and high mountains to the North. The next day they proceeded some three leagues (about seven and a half miles) to "other Islands adjoyning to the Maine, and in the Road directly with the Mountaines . . ." where the ship found a safe haven that "our Captaine named . . . Pentecost Harbor." There *Archangel* tarried until May 24 while her crew dug wells for water, cut wood, fished and beachcombed. So far so good. But then an apparent gap occurs in Rosier's narrative—suddenly it is May 30. ". . . leaving the Ship in a good harbour," Waymouth with 13 men took off in the shallop. In the meantime, Indians approached in "Canoas . . . made of the barke of Beech," offering to trade "Furres and Skins," which they did two days later. A day after leaving the ship, Waymouth returned (this time in a "Pinnace"), having "discovered up a great River, trending all almost into the Maine." On June 4 "we shipped [one savage, who had come aboard to return an empty food receptacle] and foure others, two Canoas, with all their Bowes and Arrowes." Not for another week (June 11) was exploration resumed, when "we passed up into the River with our Ship about six and twenty miles; of which (were it not of necessitie I must report somewhat) I had much rather not write, then by my relation to detract from the worthinesse thereof . . . ," which Rosier follows with an extended panegyric for a river that for "good harbours for ships of all burthens" and for shelter has no peer "in England, Scotland, France or Spaine." This river beyond compare "runneth up . . . nigh forty miles toward the great mountaines . . . in bredth a mile . . . halfe a mile is the narrowest, where you shall never have under 4 and 5 fathoms water all along . . . ." As for the tide, "It floweth . . . eighteen or twenty foot at high water." The Orinoco paled by comparison, as did the Rio Grande, the Loire and the Seine. Only at the Thames did Rosier stop short, "because it is Englands richest treasure." Finally, on June 13 "we went from our ship up to that part of the River which trended Westward into the Maine . . . further up into which we then rowed by estimation twenty miles . . . [where] any ship drawing 17 or 18 foot water, might have passed as farre as we went . . . and . . . much further . . . from . . the Harbour at the entrance . . . to the furthest part we were in this River . . . was not much lesse than threescore miles."

The other, more dubious, evidence invoked by the St. George River partisans—chiefly Burrage—is the Simancas map[35] (ca. 1610, perhaps later), which purported to represent a survey "of that Province [of Maine]" conducted for James I. Taking in the coastline from the Strait of Belle Isle all the way to Chesapeake Bay, this important map delineates the Kennebec and Sheepscot rivers in remarkable detail (see Fig. 3), along with another labelled "Tahanock" where the Damariscotta should be and, like it, having an abrupt terminus; no rivers whatever appear between the "Tahanock" and Penobscot Bay. The Camden hills, however, are clearly shown. "I St George" (Monhegan) appears off the "Tahanock" due south of Damariscove Island (not shown).

Such are the sands on which rests the 80-year-old tradition that the St. George is the Maine river George Waymouth explored.[36] Consider, to begin with, the numerical distances that throng the *Relation*: *Archangel*, it says, passed 26 miles up the river, which "runneth up . . . forty miles toward the great mountaines." Although the St. George is but 12 miles long, Burrage has a ready explanation—Rosier's figure "is only an estimate."[37] In further extenuation of this and other Roserian "estimates" we are told matter of factly they are "in excess of actual measurements."[38] Nor is Burrage in the least disconcerted by Rosier's claim that his shipmates rowed up another 20 miles from "that part of the River which trendeth Westward," where they found 18 feet of water "and . . . much . . . further." Burrage even went so far as to reproduce the *Relation*'s title page—which featured "60 miles up"—in the very part of the book advocating the St. George. Again, the 18 to 20 foot tide Rosier mentions is brushed aside as simply "an erroneous estimate."

It may be argued that Rosier was a historian, not a mariner, and should be permitted license in describing distances traveled by water. But this was not his first sea voyage, nor is it credible that the *Relation* could have been published without a careful review by the

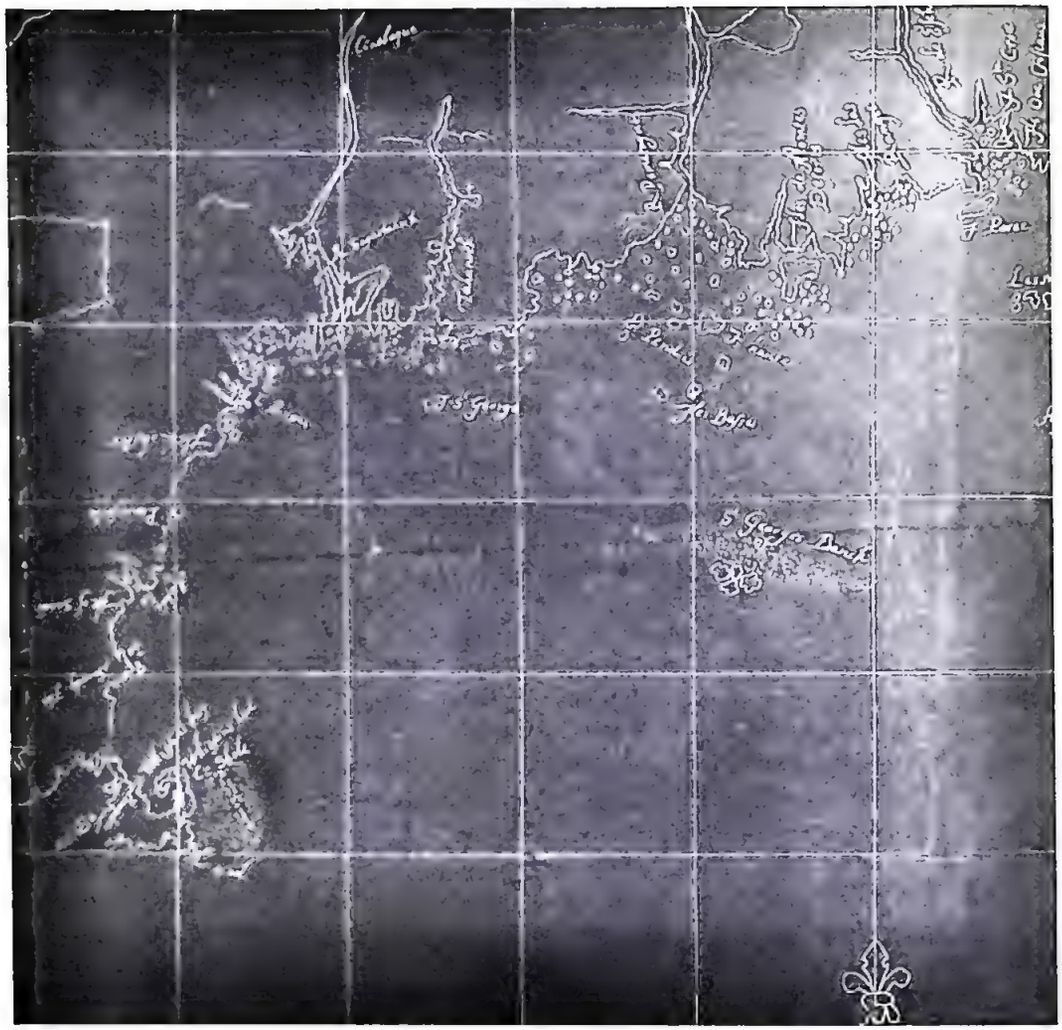
35. See Emerson D. Fite and Archibald Freeman, *A Book of Old Maps Delineating American History* (Cambridge/New York, 1926/1969), map 30.

36. R. P. Tristram Coffin, in his exuberantly romantic *Kennebec: Cradle of Americans* (Camden, Maine, 1965), is an exception. He entertained no doubts that the Kennebec was the river Waymouth explored. D. B. Quinn, along with most modern scholars, accepts what has become the St. George tradition, as does Gorham Munson for the general reader, *Penobscot, Down East Paradise* (Camden, Maine, 1959), pp. 42-5.

37. Burrage, *Early English . . .*, footnote p. 370.

38. Burrage, *Early English . . .*, p. 363.

FIGURE 3



Detail from Velasco-Simancas Map, ca. 1610. *Courtesy of Simancas, Archivo General de Simancas, Estado Leg.2588, fo 22.*

master "Captaine" for whom Rosier expressed such high regard. What seasoned seafarer, master or diarist, trained to rely on his native senses in judging topography and distance and motion, could, except in a flight of fancy, suppose a 12-mile estuary to be navigable for 60 miles, or, after spending a month on the coast, mistake a 12-foot tide for a 20? In view of the remarkable accuracy of most of Rosier's coastwise figures, one may conclude that his inland estimates either applied to another river altogether or were intended to disguise, much in the vein of his charming insistence that "Many of our Company who had [sailed] in the most famous Rivers . . . affirmed them not comparable to this they now beheld." Columbus, in a similar if more desperate situation, extracted an oath from his crew that the coast they were cruising was Florida, when in fact it was Cuba. Undaunted by the evident discordance between the St. George and the log it was alleged to be describing, Burrage cited the remark about proceeding "to that part of the River which trendeth Westward" (where it has already been noted Waymouth found an additional 20 miles of deep water) as further evidence for that historically overburdened river,[39] when the truth of the matter is that the part of the river trending westward at Thomaston is a stream that is navigable in a shoal-draft boat for no more than five miles.

How helpful is the Simancas map to the later proponents of the St. George? A mixed blessing, it would

39. Burrage, *Early English . . .* , footnote p. 385.

seem. Burrage appears to believe the mysterious "Tahanock" is the St. George,[40] and in some respects it resembles Rosier's description of the river they explored, which the royal cartographer may well have read. But its location is too far west, too much resembling the Damariscotta to permit its being passed off as the St. George. Although Quinn, no doubt influenced by Burrage, also assumes the "Tahanock" to be the St. George, he thinks it could almost be taken for the Sheepscot "were it not for the small islands off its mouth . . ."[41] But the "Tahanock" is, in fact, positioned where the Damariscotta should be, and the Damariscotta *has* islands off its mouth (Fig. 3). Moreover, the cartographer reveals with great authority the configuration of the Kennebec-Sheepscot-Sassanoa-Back River complex, lacking only Southport Island. Howe, another modern adherent of the St. George tradition, undercuts his argument by evidently having failed to familiarize himself with the geography of the St. George River. He explains Rosier's account about passing "up . . . with our ship, about 60 and 20 miles" as meaning, in Howe's words, "the St. George River *below Thomaston*" (italics added), a patent absurdity that he makes no attempt to mitigate on the grounds of Rosier's apparent addiction to hyperbole. On the contrary, Howe pronounces *A true relation . . .*[42] as sound.

The Simancas map in fact shows Muscongus Bay lacking an inlet remotely suggestive of the Medomak or the St. George. Even Monhegan ("I St George") is displaced westward as if the mapmaker or surveyor had been compelled to preserve its longitude relationship to the St. George River, alias Tahanock, in accordance with Rosier's presentation. East of Pemaquid all Champlain's place name appear. Indeed, this portion of the survey could have been cribbed straight from the Frenchman's incomparable 1607 chart "L'Acadie and Norumbega,"[43] except that the Simancas curiously omits a vestigial but quite discernible St. George River that Champlain shows trending towards the Camdens. West of the "Tahanock" the English mapmaker is his own master, owing presumably to the explorations of Gosnold, Pring and perhaps the Popham colonists. However, the abrupt transition from conspicuous knowledgeability to the evident haziness characterizing the coastline east of Pemaquid, including the glaring omission of a St. George where it properly should be, raises serious doubts that any English mariner of the time, let alone George Waymouth, explored that estuary.[44]

Still, the St. George advocates ask to be taken seriously even in the face of a map they claim supports them but that appears instead to argue for a 1605 English river exploration west, not east, of Pemaquid. Burrage's advocacy of the Camden hills as representing "the mountaines" in view as *Archangel* sailed upriver is undercut by the wry admission that "A single mountain, west of the Kennebec [referring to the Simancas], may . . . represent Mount Washington as seen from the waters near Small Point."[45] Here Burrage is compelled to abandon the St. George-Camden hills premise for the "Tahanock" as the site of Waymouth's probings, a shift in ground that almost makes him look like a Kennebec proponent.[46]

Edmund Slafter revived a key testimony that had been strangely ignored by Waymouth investigators[47] prior to the publication of Slafter's edition (1878-81) of Champlain's *Voyages*. Returning from Cape Cod to Ste. Croix in 1605, de Monts and Champlain stopped at the Kennebec on July 29 hoping to meet the elusive Sheepscot sagamore Sasinou, for whom they had waited unsuccessfully at Merrymeeting Bay earlier in the month. Another Indian chief informed them that there had been a ship "ten leagues off the harbour . . . and that those on her had killed five savages *of this river* . . ." (my emphasis).[48] These evidently were the Indians captured by Waymouth* on June 4 and taken to England, whom their fellows naturally supposed had been murdered since, as Rosier admitted, the captives were confined below decks so as not to arouse suspicion. Writing nine years after Slafter, who declined to take sides in the controversy, Benjamin F. De Costa was the first to recognize the significance of

40. Burrage, *The Beginnings . . .*, p. 47.

41. Quinn, *The English . . .*, p. 520.

42. Howe, *Prologue . . .*, p. 94.

43. Based on Champlain's own Maine coast cruise in 1604. See Fite and Freeman, *A Book . . .*, map 29.

44. Quinn, *The English . . .*, p. 253.

45. The White Mountains, which Champlain saw from Casco Bay, appear on Ribero's map of 1529 and Sebastian Cabot's of 1544.

46. Burrage, *The Beginnings . . .*, p. 47.

47. Including Kennebec proponents Thomas Prince, John McKeen and Edward Ballard.

48. Slafter, ed., *Voyages . . .*, p. 91.

* Champlain wrote "From [the chief's] description of the men on the ship we judged they were English."

Champlain's disclosure, which he considered as closing the case for the Kennebec.[49] Burrage himself allowed "of this river" as meaning the Kennebec[50] but did not attempt to reconcile this admission with a later assertion that the captives had come downriver to "Pentecost Harbor," which *Archangel* was using as an anchorage at the entrance to the putative St. George River.[51] He proceeded to undermine further his pro-St. George thesis by reporting that the Popham expedition, en route to the Sagadahoc in August of 1607, repatriated the last of Waymouth's Indians "to join his people," as Burrage wrote, at Pemaquid, which is just east of the Damariscotta ("Tahanock" on the Simancas map) and separated from the St. George River by the whole of Muscongus Bay, a distance of about 25 miles by land.

If much of Rosier's *Relation* must be discounted owing to manifest exaggeration, the accounts—insofar as they exist—of James' visitors to Norumbega in the two years following Waymouth call for equal skepticism. Even so, they are worth quickly reviewing for the retrospective light they cast on *Archangel*'s wanderings.

In October of 1606, Sir Ferdinando Gorges, commander of the Plymouth garrison and soon to become Lord Proprietor of the Province of Maine, and Sir John Popham sent Martin Pring on his second voyage to New England, with Thomas Hanham commanding. They had instructions to rendezvous off Penobscot Bay with Richard Challons, who had left England in August to search out a colony site and to repatriate two of Waymouth's Indians. As Challons failed to appear, Pring forthwith sailed west to the Kennebec with results that were enormously pleasing to his sponsors. Apparently nothing was heard from Pring directly, at least nothing that has survived—even Gorges, beside himself with excitement over the intelligence that his voyagers brought back, confined his public observations to an expression of effusive praise tantalizingly devoid of particulars. Pring, Gorges declared,

> had made a perfect discovery of all those rivers and harbours *he was informed of by his instructions* . . . and brought with him the most exact discovery of that coast that ever came to my hands . . . his relation of the same wrought such an impression in [John Popham] and us all . . .[52] (Emphasis mine)

And inasmuch as Purchas disclosed that

> Reader, I had by me the Voyage of Captaine Thomas Hanham (written by himself) unto Sagadahoc . . . ,[53]

there seems little reason to doubt that the Kennebec also is one "of all those rivers . . . [Pring] was informed of" as a result of Waymouth's expedition in the previous year. It strains credulity to suppose that, with winter looming, Pring happened on the Kennebec without benefit of prior intelligence. And the usually circumspect Burrage, noting that the Kennebec was found to be "larger and more important . . . than [the Georges]," neglected to ask himself why it was, if the St. George was the matchless river Rosier claimed it to be, that, in Burrage's own words, "Especially was attention given to . . . the coast . . . west . . . of Waymouth's discoveries . . . ."[54]

Attention must also be paid to Waymouth's final latitude determination as *Archangel* was about to weigh anchor for the Old World. The *Relation* as published in 1605 mentions that he took observations of the sun on June 15, using his astrolabe, ring instrument and cross-staff, but gives no latitude figures. But in 1625, Purchas recorded 43°20′N as the latitude found by—in Rosier's words—"Our Captaine upon the Rocke in the middest of the Harbour."[55]

One is at a loss to explain why most investigators have ignored this finding, as if to do so might hopelessly confuse the matter of Waymouth's whereabouts when he took his sighting, when it is the only latitude reading handed down to us having any bearing on the site of his Maine coast operations. Waymouth not only used all his instruments on this occasion, but evidently enjoyed optimum conditions in shooting the sun. The reliability of the reading is further underscored by his apparent familiarity with Edward Wright's landmark *Certaine Errors in Navigation* (1599), which summarized the common navigational mistakes of the day and won immediate recognition by seamen as well as by

49. De Costa in Winsor, *The Narrative . . .*, vol. III, p. 175.
50. Burrage, *The Beginnings . . .*, p. 34.
51. Burrage, *The Beginnings . . .*, p. 44.
52. Ferdinando Gorges, *Advancement of Plantations*, cited in A. L. P. Dennis, *Captain Martin Pring, Last of the Elizabethan Seamen* (Collections of the Maine Historical Society, Portland, 1906), Third Series, vol. 2, p. 19.
53. Purchas, vol. 19, p. 296.
54. Burrage, *The Beginnings . . .*, pp. 59-63.
55. Purchas, p. 355.

Wright's fellow academicians. He, in fact, identified not only sources of first order errors such as ocular parallax and wayward solar declination tables, but others like the effects of atmospheric refraction that Wright knew were too small to benefit the shipboard haven-finding art of 1600.[56]

Nevertheless, as we know, the English practitioners of that art developed a latitude-measuring competence that compels us to take George Waymouth's final reading quite seriously. The ring instrument Rosier mentions is considered by Waters to be the same as the ring-astrolabe John Davis illustrated in his *Seamans Secrets*,[57] a device with a scale twice as large as the conventional mariner's astrolabe.[58] And Waymouth probably had a Davis backstaff or quadrant,[59] the refined version of Davis' first backstaff that was a notable improvement over the cross-staff that George Best said Frobisher "allways" used to sight the sun in northern latitudes, and with striking results (Fig. 2).[60]

Now, 43°20′N is very close to Cape Porpoise Harbor and the entrance to the Kennebunk River. The mouth of the St. George estuary, however, is more than 30′ to the north and thus outside both the probable and possible errors according to our latitude analysis. Even the entrance to the Kennebec, for the reasons mentioned earlier a likelier place for Waymouth's visit, would, at 24′ away, stretch the limit of possible latitude error. The range of *probable* error, however, would comfortably include the entrance to the Saco River.

The truth of Waymouth's littoral and river explorations may never be known. But there are data, especially the cartographic evidence as well as the latitude sighting just mentioned, sufficient to cast the century-old tradition enshrining the St. George River in grave doubt.

* * * *

Latitude data drawn from the records of sixteenth and early seventeenth century New World explorers suggest that shipboard sightings of the time, especially by the English, were substantially more reliable than has heretofore been thought. Clearly, a "standard" error of 10′ or less as compared to 30′ or more warrants reexamining the explorations of voyagers in addition to Pring and Waymouth, for whose wanderings the revised estimate of latitude error has suggested interesting reinterpretations.

56. Waters, pp. 220-28
57. Markham, *The Voyages . . .*, pp. 336-37.
58. Waters, p. 301.
59. Quinn, *The English . . .*, footnote 4, p. 299.
60. Waters, p. 146.

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Edmund Custis and His "Wreck-Fishing" Invention

JAMES B. LYNCH, JR.

ON almost any list of notables of colonial Virginia one is apt to find the Custis family. Best known of its members are Major General John II (1628/1629-1696) of "Arlington;" his grandson John IV of Williamsburg; his great-grandson Daniel Parke Custis, whose widow Martha attracted a well known suitor; and his great-great-great grandson George Washington Parke Custis, whose daughter married Robert E. Lee. Virtually unknown, however, even to specialists of the 17th century, is John II's brother Edmund Custis, who chose not to emigrate to the New World.

Notwithstanding, Edmund rivaled his brother the General in distinction. Merchant, conspirator, spy, business partner of King Charles' brother, friend of Samuel Pepys—Edmund Custis was all of these, but he was also an inventor who contributed a minor but nonetheless significant chapter to the history of salvage. Specifically, it is his invention for extracting sunken cargo—oddly termed "wreck-fishing" in the patent cited below—with which this essay is concerned.*

On 7 March, 1671 patent No. 163[1] was granted by Charles II to "our trusty and wellbeloved Edmund Custis the elder [for] a New Way never before practised in any [of] our Dominions, in Discovering and Takeing upp of Goods out of Wrecks & Shipps sunck in the Sea, or upon the Coasts, that have been Sunck Long ago, with severall Tools and Engines never before made use of (in these Parts) for that End and Purpose."

Eleven months earlier Edmund had signed an extraordinary contract with the King's brother James, Duke of York and Lord High Admiral, which would split 50-50 the profits from "all such wrecks, treasures, or goods [Custis] or his assignes should soe recover [along the coasts of England and Ireland for fifteen years] . . ."[2] Furthermore, Edmund was empowered by this agreement to search for and salvage wrecks in the West Indies and the Bermudas, with one-fourth of the proceeds from these operations accruing to James and the remainder to himself.[3] For both men, but especially for Edmund, this was at least potentially a most lucrative partnership.

One's curiosity about the precise character of Edmund's invention, however, is frustrated by his apparent reluctance to describe or illustrate it in the patent. Indeed, the monarch himself seemed irked by the inventor's reticence, for at the close of the writ of 1671 he re-confirmed Edmund's privileges with this demurral ". . . not withstanding the not true and certain describing [of] the said invention . . . or of the severall tooles, engines, or instruments . . ."[4]

Undoubtedly, by his silence regarding the exact nature of the invention Edmund hoped to protect his patent from foreign infringement. Nevertheless, one must ask: what was this mysterious device to which King Charles quaintly referred in the patent as a "wreck-fishing invention"? The answer to that question may be discovered near Newcastle where in 1673 Edmund Custis, with controversial results, sought to remove eight large vessels from the river at Tynemouth.

Before describing this remarkable feat, however, we are obliged to sketch the life of Edmund Custis. Born 1623 at Cirencester in Gloucestershire, Edmund was probably the eldest of the seven known children of Joan and John Custis I. Not long after his birth but before 1628/1629—when his brother John II was bap-

* I should like to thank Rear Admiral Peter Collins USN and Captain David Long USN, Retired, especially the latter, for technical advice in the preparation of this article.

1. *Patent of Edmund Custis the Elder: Raising Sunken Goods, &c.* (London, 1857), 1.

2. *Ibid.*, 5. On this same page reference is made to an anonymous partner of Edmund whom we have identified as his brother Thomas (see footnote 31).

3. *Ibid.*

4. *Ibid.*, 7.

tized abroad[5]—the Custis family emigrated from England to the United Provinces. Just where in that country they first settled is still unknown. Nevertheless, by 1644 they were domiciled at Rotterdam.[6]

A few years after that date Edmund, age 26, could be found living at Amsterdam as a merchant. Thus, a Dutch notarial record of 1649 reveals that he was betrothed in that year to the daughter of a Shrewsbury merchant, Mary Hering, who resided in the same Dutch city.[7]

By now in his middle twenties, Edmund Custis was being groomed, so it appears, to take over the leadership of a trading company established by his father, with family operatives in Rotterdam and Amsterdam. Soon the Custis firm would have branch offices in London, Flanders, Virginia, and probably Barbados as well, trading in such commodities as coal, grain, tobacco, wool, and sugar.

To head the London office, Edmund was sent to England in the early 1650s. Almost as soon as he arrived, the young merchant became entangled in Royalist plots to undermine the Commonwealth and to restore the Stuarts.[8] Arrested at the beginning of 1654, Custis was imprisoned for an indeterminate period. After his release and until the Restoration, he maintained a discreet existence confined largely to his Lime Street home in London.

Upon the renewal of the monarchy Edmund was free to return to the continent. Dividing his time between the Low Countries and England, he became an "intelligencer" or spy, keeping an eye on Dutch movements by land and sea during the Anglo-Dutch wars and on the activities abroad of English dissidents, both political and religious.[9] While carrying out this surveillance Custis reported directly to the Secretaries of State, Williamson and Bennet (Lord Arlington after 1676).

As a result of such clandestine pursuits Edmund was able in 1679 to render service to two powerful men at their time of desperate need: Samuel Pepys and the Duke of York. Though Secretary of the Navy, the former as commoner was the more vulnerable of the pair. In striking at Pepys, moreover, the opposition party at Court, led by Shaftesbury, menaced the larger figure of the King's brother, the Lord High Admiral.[10] Mustering an array of witnesses from the Netherlands, some of whom he had numbered among his agents abroad, Custis was able to expose the perjuries of the spies and informers whose testimony had brought Pepys to the Tower. In so doing Edmund helped free the diarist.[11]

Long before the Pepys affair, however, Edmund Custis had established himself as a man of substance with powerful friends and allies. Thus, when he applied in 1671 for a patent on his nautical invention he had support from influential quarters. At the same time, chronically short of funds—but, like Parliament, avid for maritime splendor—a restored monarchy had begun to endorse the betterment of harbors and rivers.

One of England's waterways most in need of improvement in 1671 was the lower Tyne. Indeed, between Newcastle and Tynemouth, a distance of some eight miles, severe and complex problems of navigation had existed for many decades. These difficulties had recently been compounded by illegal dumping of ballast and by spillage from careless loading of coal.[12]

A little more than three-quarters of a mile from the sandbar at Tynemouth and opposite Clifford Fort (lettered B, Fig. 1), the river narrows—as our map discloses—to slightly less than 500 feet. For about half a mile west of the fort, however, the Tyne doubles in width between the villages of North and South Shields (G and H respectively) before contracting again. Within this enlarged body of water the coal fleets were accustomed to ride at anchor as they waited for westerlies and northwesterlies to blow them out to sea.

In a letter dated 21 December 1672 and posted from Newcastle, Anthony Isaacson, collector of customs for the town, informed Secretary Williamson of a disaster above Tynemouth which had occurred several days earlier. Melted by sudden warm rains, a great

5. *Virginia Magazine of History & Biography*, VIII, 394.

6. Notarial Archives, Rotterdam, Volume 436, p. 3, 9 January 1644.

7. Notarial Archives, Amsterdam, Banns, dtb 467, p. 310, 18 November 1649.

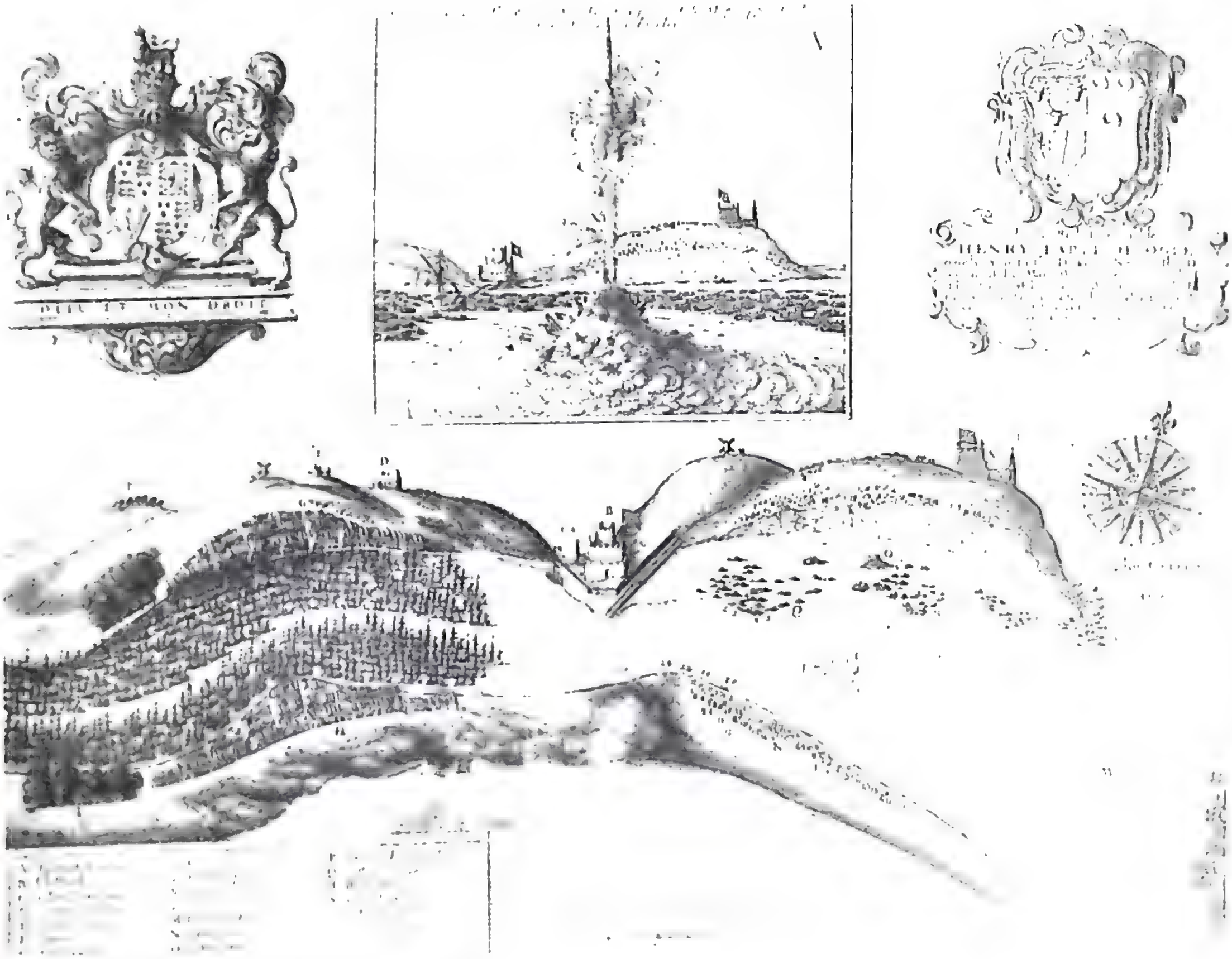
8. *A Collection of the State Papers of John Thurloe*, Esq., Thomas Birch, ed. (London, 1742), III, 65-66, 72-75.

9. See, for instance, *Calendar of State Papers, Domestic Series, Charles II*, Mary Anne Everett Green, ed. (Liechtenstein 1968), III, 505.

10. Arthur Bryant, *Samuel Pepys: The Years of Peril*, (New York, 1935), 257.

11. Pepys Library, Magdalene College, Cambridge, PL 2882, pp. 843-854.

12. *Social England*, H. D. Traill & J. S. Mann, eds., (New York, 1969), 612.



Bird's-eye View of Tynemouth. W. Hollar, 1673.

snow had left the Tyne at flood level—a phenomenon known locally as "the freshes." According to Isaacson, "Some ships were forced from the Town-quay, but were secured lower down, but I hear of very great loss at Shields, where the great fleet of colliers is."[13]

Three days later Isaacson gave Williamson a much more detailed and revealing report, one worth quoting in full:

> My account of the damage done by the sudden overflowing of the Tyne is but too true. At least nine more ships are sunk, and so unfortunately in the narrow of our Channel, that, if not soon removed, it may be of great prejudice to the whole kingdom, for the great ships, though the wind be fair, dared not venture out, for fear of falling foul of the wrecks. The magistrates and Trinity Masters were down the river yesterday to consult about clearing the Channel, and agreed with *one* [emphasis added] for a good reward if it succeeds, to blow up a very large fly-boat, which was over-set thwart the channel, which being removed, she being at present all under water, the passage out and in will be secure. It may now be a week before the fleet sails.[14]

Probably, but not positively, the "one" with whom magistrates and Trinity Masters struck an agreement to explode the fly-boat was Edmund Custis. Un-

13. *CSPDS, Car. II*, F. H. Blackburne Daniell, ed., (Nendeln/Liechtenstein 1968), XIV, 299.

14. *Ibid.*, 310-311.

certainty is fed by a broadside of 1673, *A Declaration and Exact Map of the Harbour of New-Castle, near Tinmouth Barre, since December 1672*—in which author Custis states that "divers [ways of blowing up the fly-boat] were endeavored before my coming there."[15]

Notwithstanding, at some date early in 1673 Edmund was called to Newcastle, probably at the insistence of the King, the Duke of York, or Secretary Williamson, for as winter deepened, further delay in the sailing of the coal fleet threatened the national welfare. Consequently, thanks to his "wreck-fishing" device and his "engines" Edmund was handed the role of savior of Newcastle, if not the nation!

The crisis on the Tyne which now confronted him, as well as his response to it, may for now best be left to Edmund's account of the matter in his broadside. Dedicated to the Earl of Ogle, son and heir of the Duke of Newcastle, this was a single over-size page originally accompanied by a map (Fig. 1). Etched by a foreigner resident in England, Wenceslas Hollar, the map exists now apart from the text, as stated in footnote 15.

As Edmund reports (in a style far from lapidary), of eight ships "overwhelmed by the Freshes . . . six were (as not being difficult) removed and cleared the first month; the other Two being great and deep laden, sunk in the best of the Harbour, were blown up with Gun-powder a few months after . . ."[16]

It is more than likely that the eight ships just cited were among those mentioned by Anthony Isaacson in his letter of 24 December, 1672, quoted above: "At least nine more ships are sunk, and so unfortunately in the narrow of our Channel." Knowing their position—the narrows just below Clifford Fort—one might reasonably conclude that they had been stranded on the rocky shoals to the north or in the shallow waters of the beaches to the south. If so, then the quick recovery of six of these vessels, effected by Edmund, could have easily been achieved by standard, conventional means.

Although we are aware that the clearance of the six was due to Edmund, nevertheless we must disregard his role in that particular operation, for a much more demanding task awaited him. Indeed, the overriding hindrance to navigation in the narrows near Tynemouth was posed by two vessels, one a "great fly-boat," lying, as the map shows, at right angles to the shipping lanes. After others had failed to explode these two wrecks "His Majestie," in the modest words of Edmund, "was pleased to send unto them a new way . . . ."[17]

Known after their masters as Capt. Vicar's and Capt. Gray's (K and L respectively in the etching), the pair were bottomed in what had been originally a depth of 12-14 feet at low water. Both now lay, however, 22-33 feet beneath the surface (again at low water) in chasms dug by the currents.

In addition to being so deep, Gray's and Vicar's were ships of 400 tons burdened with coal, lead, and "rocks" (probably dressed stone for paving or construction).[18] Moreover, since they rested on an exposed seam of hard coal, dredging was questionable, and although lifting devices existed, they were incapable of raising vessels of such weight from such depth.

In spite of its relatively advanced state in the late 1600s, salvage technology was nevertheless constrained by certain technical limitations. Divers, for instance, could not descend "safely" below 66 feet.[19]

Regardless of progress achieved, however, salvage operations continued throughout the century to be inordinately dear. Edmund, incidentally, had brought over a number of workmen from the Netherlands for trials of his invention.[20] These men, who must have numbered divers, engineers, and other technicians in their ranks, doubtless followed Custis to Newcastle.

He and his "severall forreigners," then, had already tested his invention—in the coastal waters of England. Now Edmund was prepared to give it a first significant and practical application. Conceived as a kind of depth charge, his device was intended to overcome the obstacles of foul weather, swift currents, and "neddees" (whirlpools) hampering the logical solution to the problem of how to remove K and L as dangers to shipping: demolition.

Against such impediments as those just indicated, according to Custis, "all former known waies would

15. This broadside, now in the British Museum Library, was published in London—most certainly at the author's expense. Bound in an unpaged volume called "Tracts Relating to Fens Inland Navigation etc 8 [sic]," it is also known as Volume K. At my latest perusal (October, 1988) the catalog card bore a notation that the map is missing. However, my wife, Professor Emeritus Anna M. Lynch, has traced this "lost" map to the Department of Prints & Drawings, which has graciously provided me with a photograph and with permission to reproduce it for this article.

16. *Ibid.*

17. *Ibid.*

18. *Ibid.*

19. Robert F. Marx, *They Dared the Deep: A History of Diving*, (Cleveland 1967), 37.

20. *Patent*, 1.

have failed . . . for no flying Fusee would burn to the bottom, but either bend or break, which must needs choak or drown the Wild-fire by the way . . . ."[21]

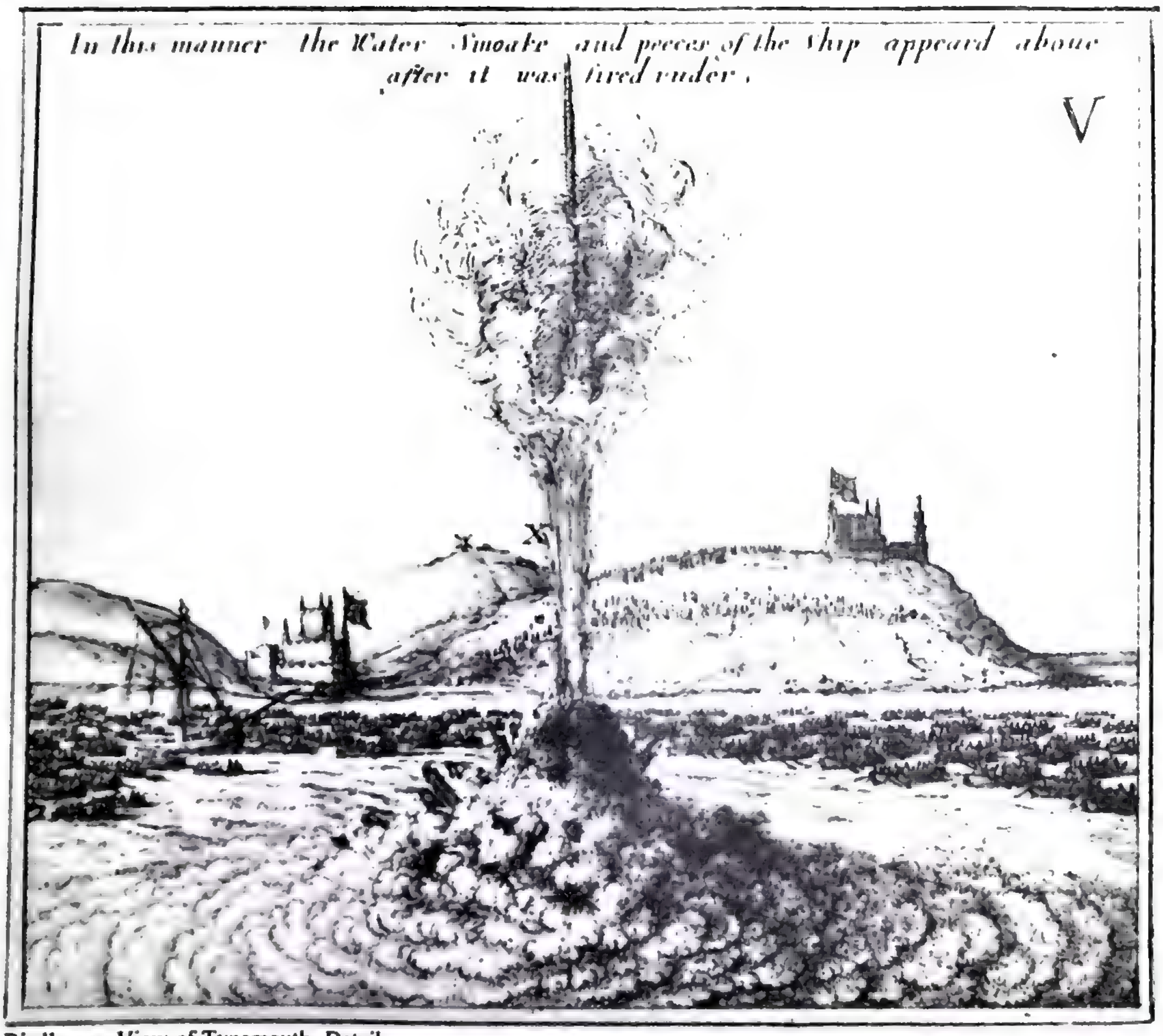
It appears, then, that Edmund's predecessors had targeted the two deep wrecks with flexible cylinders of explosives set off by fuses soaked with an incendiary ("Wild-fire"). Buffeted by swirling currents, however, the bendable tubes had crimped or snuffed out the fuses before the latter could reach and detonate the ships in question.

What was needed, of course, was a much more rigid—and thus more stable—type of duct for putting an explosive on target. Edmund Custis' invention now stands revealed. By and large, it was a device "to convey a Fire-Ball through a hollow mast fastened to [a] Chest [of powder] at the bottom of the Sea . . . ."[22] This chest, he indicated, was fashioned so as to accommodate itself like a shaped charge to the hull of the vessel to be destroyed.

In the square compartment (Fig. 2) at the top of his print Hollar has depicted the explosion of one of the two vessels. It can be identified as Vicar's because the number 28, indicated on the upstream side of that ship (K in Fig. 1) is the precise depth (in feet) at which

21. Broadside.

22. *Ibid.*



Bird's-eye View of Tynemouth. Detail.

Edmund, according to his broadside, placed a chest with seven barrels of powder beside—not under (as Isaacson wrongly asserts below)—the hull.

But how to detonate the powder, which by his account exploded only fifteen seconds after the "Fire-Ball" was dropped? Instead of guessing let us turn to a pamphlet published about 1720 by an English engineer named Jacob Rowe and titled *A Demonstration of the Diving Engine—Its Invention and various Uses*.[23] Therein Rowe describes two methods of "Blowing up Rocks, and Ships Decks under Water." The first of these need not concern us.

The second, on the other hand, seems to have been inspired by Edmund's "new way to convey a Fire-Ball through a Hollow Mast," as described above. Indeed, since the latter's patent had expired before the end of the 1600s one may assume that Rowe legally appropriated Edmund's device, adding perhaps one or two variations of his own.

Disclosure of Rowe's method, then, may provide more specific details of Edmund's invention:

> Let a Leather Pipe be prepared of sufficient Length for the Depth of Water and supported within by Wire in the Form of a Worm [i.e. a spiral] to resist the Pressure of the Water & for the Pipe to remain flexible and then let a little Brass Cylinder be screwed or fasten'd into the Head of the Cask of Powder and the said Cylinder fill'd full of a Fuze which when set on fire to last a convenient Space of Time and at the other End . . . let the end of the Pipe be made securely fast and the other end supported on the Surface of ye Water by a little floating Stage; and then from the Top of the Pipe . . . let a little red hot Iron Bullet which will not fail of setting fire to ye Fuze (the Space of many Fathoms from the Surface) which must be made to burn long enough for the Boat & Executors of this Performance to get out of Danger of the Blow.[24]

Hollar's representation of the earthshaking moment of violence following the demolition of Capt. Vicar's fly-boat, in which timber, smoke, and water merge into an enormous geyser, is surely the same as that described by Anthony Isaacson. The latter, whom we have already encountered, wrote to Secretary Williamson in a letter dated 8 March, 1673:

> Today Mr. Edmund Custis had an opportunity to experiment the blowing up of one chest, in which were seven barrels of powder, under [sic] the great fly-boat which lies so prejudicial to the river, and has had very good success, having shaken a great part of it, and broken away a great part of the stern, so that, if fair weather continue, he doubts not soon to remove the whole, either by powder or enginees . . .[25]

Seen in the above context, the ambiguous phrase "engines never before made use of (in these Parts)"—may now be construed. It pertains to some novel kind of crane, mounted on a boat or floating platform and used for removing portions of the wreck.

From our vantage point Edmund Custis' invention may appear ingenuously simple. From that of his contemporaries, on the other hand, Edmund's device was of enormous advantage because it could with relative efficiency, speed, and safety decrease tasks customarily allotted to divers laden with grapples, picks, adzes, and other such tools. Venturing out of their bells again and again, they had only a few precious moments during each foray to rip through a resistant hull, deck, or rigging before scurrying back for air.

Thanks to Edmund's innovative contraption, however, divers could now be used with greater cost-effectiveness, their energies limited to inspection of wrecks, placement of explosives, and collection of goods made accessible by blasts. As for the curious term "wreck-fishing," applied to this invention, one can easily account for it by imagining the effects produced among large concentrations of fish by underwater explosions.

To label Edmund's device a diving bell, by the way—as does the author of a history of that subject[26]—is of course an error. What may have misled this writer, perhaps, is the meaning of the verb "discover" as found in these words from the patent quoted above: "A New Way . . . in Discovering and Takeing upp of Goods . . ." In written and printed English of the 1600s, for example, "discover" frequently means "exhibit," "expose," or "display." That the clerk who framed the language of the Custis patent had such a meaning in mind seems evident from the nature of the invention.

For Edmund Custis the demonstration of his brainchild at Tynemouth had been an exemplary success. The magistrates of Newcastle, noted for the tightness of their purse strings, were of a contrary mind. Almost as soon as Edmund terminated work on the two large

23. See Alison McLeay, *The Tobermory Treasure*, (London 1986), 50-65. The pamphlet is in the National Maritime Museum (Greenwich, England), to which I am indebted for the approximate date of publication.

24. *Ibid.*, 70.

25. *CSPDS, Car. II*, XV, 24.

26. Arthur Whittet Thomson, "Two Thousand Years Under Sea: The Story of the Diving Bell," *American Neptune*, VII, 261-281.

wrecks—apparently 2 July, 1673[27]—wrangling commenced between him and his debtors.

Unfortunately for the latter, in the sniping that ensued they were outgunned. On 19 June, 1674 the following directive, which informs us inadvertently of the nature of Edmund's contract with Newcastle, was issued from Windsor:

> The King to the Mayor and Corporation of Newcastle-upon-Tyne. Requiring them to pay to Mr Edmund Custis the sum of 900 [pounds] for expenses, still unpaid, incurred by him in the successful attempt to clear the harbour for the free egress and regress of ships, and the further sum of 1,500 [pounds] as his reward for the accomplishing the above object . . .[28]

Soon wrangling rose to litigation. In the summer of 1673 two aldermen argued at London before the King's Council that neither Gray's wreck nor Vicar's had been completely cleared from the Tyne, and that remnants of both were still a threat to navigation. Doubtless aware that their plea was falling on deaf ears, the aldermen attempted to bolster Newcastle's suit at a further hearing on 18 September, 1674 by proposing that "the master and brethren of Trinity-house of Newcastle," *qua* arbiters of a maritime dispute, examine the expenses undergone by both Newcastle and Custis.[29]

Submitted in five weeks—an unbureaucratic promptness which implies that the support of Trinity House had been discreetly solicited and granted in advance—the report of master and brethren reveals the surprising information that Newcastle "had disbursed the sum of 840 [pounds] . . . in removing the wrecks since Custis' undertaking."[30] Another piece of unexpected news turns up in this same report, one that serves to identify Edmund's nameless other "partner" in the patent. He is Thomas Custis, Edmund's brother, whose duties apparently included those of bookkeeper, paymaster, and bill collector.[31]

Trinity House concluded its testimony with the tart observation that "there is no difference betwixt the condition of the said wrecks then and now, but what the tydes make . . ."[32]—a bald admission that the 840 pounds expended by Newcastle since early July, 1673, when Edmund quit his work there, had been wasted.

Although the king himself intervened in Custis' behalf, the magistrates delayed fully honoring the latter's claims on the grounds that he had not wholly honored his contract. In the power struggle which ensued, however, Edmund was armed with not only the support of Charles and the Duke of York but also that of the extremely influential Henry Cavendish, Earl of Ogle, whose arms appear at the upper right in Hollar's print (Fig. 1). Ogle, whom Custis obviously regarded as a patron, was a member of the very Council before which the Newcastle aldermen and Trinity House representatives chose to plead their case. But more than that, he was Lord Lieutenant of Northumberland and Governor of the port and town of Newcastle.[33]

It goes without saying that with such heavy guns trained against Newcastle Edmund was bound to prevail. Notwithstanding, Newcastle remained peevishly obstinate. A final settlement, for 400 pounds, was not reached until October, 1675.[34] Whether or not this quitclaim fully recompensed Custis is unclear from the records. If it was not the best, however, it was certainly the only settlement which Edmund could hope to win from his stubborn adversary.

There remains to be considered the question of the salvage rights (cited above in the 1671 patent) which Edmund and the Duke of York had contracted. No reference to such rights, however, can be found in the proceedings before the King's Council. Moreover, Edmund, as we saw above, was employed by Newcastle on a reward-plus-expenses contract. Nevertheless, his recovery of "one third part of four hundred peeces [of] lead"[35] from Gray's ship after it was blasted suggests that he and his partners may have had a lien upon its cargo under salvage law.

Be that as it may, by October, 1675, the date of final settlement, Edmund, undoubtedly anxious to sever his ties with Newcastle—perhaps, indeed, to purge his memory of that niggardly town—had returned to the continent. That the people of Newcastle, on the other

27. *Reprints of Rare Tracts and Imprints of Antient Manuscripts*, chiefly illustrative of the history of the Northern Counties; and printed at the press of W. A. Richardson, Newcastle. Volume III, Historical Newcastle, MDCCCXLIX, p. 87.

28. *CSPDS, Car. II*, XVI, 285.

29. *Reprints*, 87.

30. *Ibid.*

31. *Ibid.*

32. *Ibid.*

33. See Sir Bernard Burke, *A Genealogical History of the Dormant, Abeyant, Forfeited, and Extinct Peerages of the British Empire*, (London, 1883), 109.

34. I owe a copy of this quitclaim, drawn from the Newcastle River Court Book for 1675, to the kindness of the Tyne & Wear Archives in Newcastle-upon-Tyne.

35. Broadside.

hand—especially the myriad assembled in Hollar's print on beaches, hills, and wherry-boats to observe the demolition of Capt. Vicar's "great fly-boat"—soon forgot Edmund Custis is unlikely.

James B. Lynch, Jr., who received his Ph.D. from Harvard, retired several years ago from the Art Department of the University of Maryland. As an art historian, Professor Lynch has authored numerous publications on pre-Columbian, colonial, and especially modern Latin American art. Recently, however, he has been researching the history of colonial Virginia, specifically that of the Eastern Shore. The Virginia Genealogist *will soon publish a long article by Lynch on the early history of the Custis family. At present he is working on a two-volume history of the Custises.*

Sea Power and South America: The "Brazils" or South American Station of the Royal Navy 1808-1837

BARRY M. GOUGH

During that celebrated period of British overseas influence in the nineteenth century known as the *Pax Britannica*, the government of the United Kingdom maintained ships-of-war on several "foreign" stations. They did so with a view to securing "British interests" on and over the seas. Each station had an area or zone to patrol, a squadron of ships, and a headquarters or base of operations. Each station also had a Commander-in-Chief who wore his pennant in a flagship. To the Commander-in-Chiefs and to the Lords Commissioners of the Admiralty in London all men and vessels of the Royal Navy "on station" were responsible and answerable for fulfilling the standing regulations of the Service and for following any special instructions sent from Their Lordships. In the annals of British naval history the West African, East Indies, and Mediterranean stations are rather highly regarded, perhaps owing to the heightened appreciation of scholars in the history of anti-slavery and anti-piracy works in Africa and China waters respectively, and of naval-diplomatic pressures exercised by the British fleet in the Mediterranean. The Cape of Good Hope, the Australian and the Pacific stations are less well known. Of all British "foreign" naval stations, the South American or Brazils station ranks as the least well known.[1] Despite this neglect by historians, the South American station constituted a significant command of the Royal Navy on foreign service. A full account and analysis of naval operations by British warships on this station is not offered here, but rather an outline of the administrative structures and obligations of that particular command.

The Spanish and Portuguese empires in Latin America had been built on grand scales, but they were prone to administrative difficulties, illicit trade and contraband, and, not least, the perils of international relations. Napoleon's invasion of the Iberian Peninsula precipitated the revolutions of Spanish America. "The nationalist monarchist movement in Spain," wrote the distinguished English historian of these matters, R.A. Humphreys, "was paralleled by a semi-nationalist, semi-monarchist movement in America. It began ostensibly as an assertion of freedom from French control. It ended as a war of independence against Spain." At the local level colonial conditions and aspirations led to a variety of overlapping and sometimes competing political and administrative responses that British naval officers could only be amazed at, or more likely, puzzled and even befuddled by. Commenting on why the war became a revolutionary one against Spain, Professor Humphreys explained that this was "due partly to the action of the Spanish, partly to that of the colonial authorities, partly to deeper colonial conditions and aspirations. Like the earlier revolution in North America that in Latin America was not merely a struggle for home rule; it was also a contest as to who should rule at home." The fulfilment by the Spanish Americans themselves, not least the inspired activities of their great leaders Bolívar and San Martín, remains "a legitimate source of pride to a people whose past has been too little understood and whose successes have been too little appreciated."[2]

1. Some of the East Indies and Pacific station boundaries are recorded in Gerald S. Graham, *Great Britain in the Indian Ocean, 1810-1850* (Oxford: Clarendon Press, 1967), pp. 455-59, Barry M. Gough, *The Royal Navy and the Northwest Coast of North America, 1810-1914: A Study of British Maritime Ascendancy* (Vancouver: University of British Columbia Press, 1971), pp. 243-46. I gratefully acknowledge the assistance, rendered over many years, by John Bach, who first guided me through the perils of reading Admiralty correspondence and whose pioneering research has been published as *The Australia Station: A History of The Royal Navy in the South West Pacific, 1821-1913* (Kensington, N.S.W.: New South Wales University Press, 1986). For their assistance and in reading an earlier version of this essay I also wish to thank C.R. Boxer, A.C.F. David, Ronald Newton and David Higgs.

2. R.A. Humphreys, ed., *British Consular Reports on the Trade and Politics of Latin America, 1824-1826* (London: The Camden So-

And during the period that the South America station had to concern itself so heavily with such radical political transformations the map of the Western Hemisphere was being transformed and reordered.

British commerce in South America made steady, if slow, gains during the late eighteenth and early nineteenth centuries. Such activity required official protection from interference and piracy. The presence of a British sloop-of-war lying in the roadstead near a trading port was always a salutary sight to British merchants and commission agents as well as to those of other nations: similarly, it was a cautionary message to any insurgents or pirates who might consider tampering with a British or European cargo vessel or warehouse. Moreover, during that protracted period of insurgency, revolution, civil war, and feared repression from the imperial powers who dominated the affairs of South America before the independence achievements of the 1820's, the Royal Navy's vessels "on station" provided a constant reminder of British policies. These policies were to foster the cause of peace for the purpose of profit, and to promote the health and trade of states in South America. To a certain degree, the pursuit of those objectives meant preventing the former imperial powers, Spain and Portugal, from reasserting their old dominance. Equally, the Royal Navy watched the threatened rivalry of the two other nations which had extensive, indeed growing commercial and diplomatic interests in South America, France and the United States. In the words of the liberator Simon Bolívar, "Only England, mistress of the seas, can protect us against the united force of European reaction"[3] As the pioneering and distinguished British historian of South American diplomatic history, Sir Charles K. Webster, so aptly put it, "by two main agencies—her trade and her fleet," Britain was able to establish a very strong role in Latin American affairs.[4] This was a view fully appreciated by nationalists and revolutionaries seeking to establish states free from the dominance and potential interference of the Old World.

A second duty of the Royal Navy on the coasts of South America was to attempt to check the slave trade. This was an onerous duty, for the places of disembarkation were numerous and invariably out of the way, and for that reason the Navy's squadrons on the western and eastern coasts of Africa attempted to stop the trade "at its source," so to speak. From time to time a British sloop-of-war such as the *Frolic* might drive a slaver ashore on the coast of Brazil or capture a slave-carrier and bring her to a port where an Admiralty court might condemn the ship and free the captives. The British government was unable in the 1820s and 1830s to enforce the abolition of the Brazilian slave trade. Despite the signing of a strengthened anti-slave trade treaty in 1826, which made Brazilian involvement after 1830 the equivalent of piracy, the trade continued. The abolition, which was always a British demand as a price of international recognition of Brazil's independence and stature among nations, was unpopular in certain local quarters and led to the abdication of Dom Pedro in 1831. Pressure from Lord Palmerston, the Foreign Secretary, did not have much effect, and it was not until Parliament passed Lord Aberdeen's 1845 Act, whereby Britain unilaterally assumed powers to suppress the Brazilian trade, that matters changed. Under this measure, coercive naval action was employed by the Royal Navy in Brazilian waters. Final abolition depended on Brazilian governmental will and ability to enforce, and on influential Brazilian opinion. But the student of these matters, Leslie Bethell, states that this Act and the naval work of the squadron was "the main factor leading to the effective ending of the trade almost immediately."[5]

The headquarters of the South American station was Río de Janeiro. From the mid-eighteenth century, British and European merchant vessels had made Río a frequent port of call. The imposing entrance to the great haven, dominated by the Sugar Loaf, Pão de Açúar, always afforded a welcome sight for mariners as they approached this safe port after usually a lengthy voyage. As they drew nearer, they could see two three-decker stone forts, one on either side of the en-

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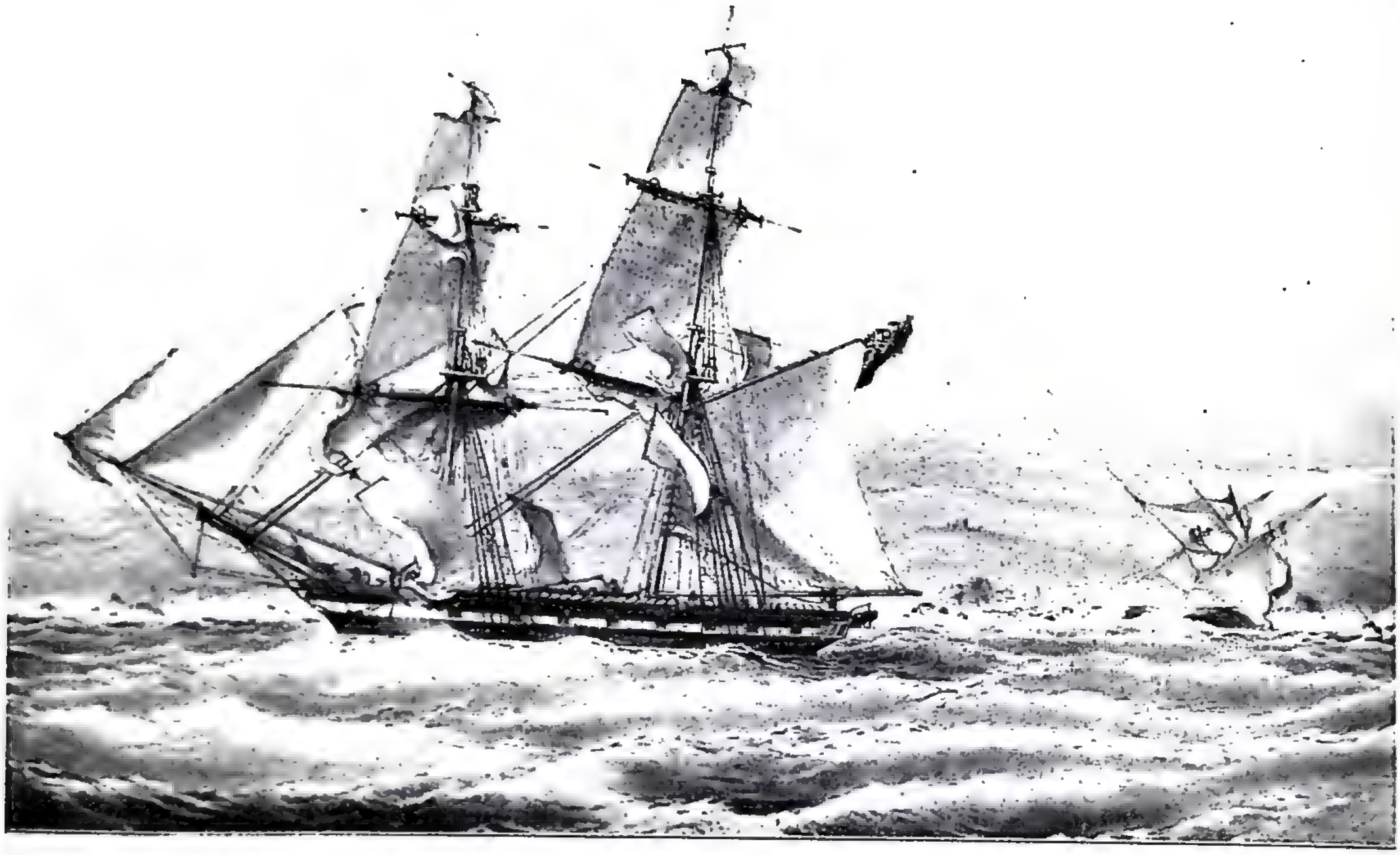
ciety, 1940), pp. viii-ix. For further particulars on British policy for promoting trade, see D.C.M. Platt, *Finance, Trade,* and *Politics in British Foreign Policy, 1815-1914* (Oxford: Clarendon Press, 1968), pp. 322-23.

3. Quoted in Dexter Perkins, *The Monroe Doctrine, 1823-26* (Cambridge, Mass.: Harvard University Press, p. 32), p. 154.

4. Sir Charles K. Webster, *Britain and the Independence of Latin America* (2 vols.; London: Oxford University Press, 1938), 1:11.

5. George Francis Dow, *Slave Ships and Slaving* (Salem, Mass.: Marine Research Society, 1927), p. 250. Graham, *Great Britain in the Indian Ocean*, p. 110 ff. Leslie Bethell, *The Abolition of the Brazilian Slave Trade: Britain, Brazil and the Slave Trade Question* (Cambridge: Cambridge University Press, 1970). Also, Bethell, *Cambridge History of Latin America, Volume III: From Independence to c. 1780* (Cambridge: Cambridge University Press, 1985), p. 224.



A Slaver Driven Ashore on the Brazilian Coast by H.M. Brig "Frolic"
From a colored lithograph by H. John Vernon, published about 1840, in the Macpherson Collection

trance. Shore and island batteries lay within the entrance. A large citadel and a monastery dominated the town's skyline. This magnificent harbor, perhaps the best in South America, offered a safe refuge, a good place for refit and repair if necessary, and a beautiful locale for obtaining drinking water, provisions, especially fresh fruit, and wood. From thence, ships of war would proceed outward bound, and round the Cape of Good Hope or Cape Horn on voyages of discovery, of consular duty, or of war. And from Río they would proceed also on more specific missions, espicially hydrographic surveying duties. By 1777 Río had become unofficial headquarters for British warships operating in South Atlantic or even Pacific waters.[6]

From the Brazilian perspective, having British warships call at Río benefitted local business. But in the eighteenth century not always did the Portuguese governor at Río respond to the arrival of a British warship without a good degree of fear and concern, understandably suspicious as he was of foreign intentions and possible interference. For instance, when Captain James Cook, R.N., the celebrated surveyor and explorer, called at Río in 1768 outward bound to the South Pacific, he was enjoined by the Portuguese governor against reporting any particulars of Río's coastal defenses, an injunction which he subsequently ignored but which went undetected by the local authorities. When H.M.S *Providence*, William R. Broughton commanding, called there in 1795, Portuguese officials announced their policy that they would not let a British

6. Rudy Bauss, "Río de Janeiro: Strategic Base for the Global Designs of the British Royal Navy, 1777-1815," in Craig L. Symonds et al., *New Aspects of Naval History* (Annapolis, Md.: Naval Institute Press, 1981), pp. 75-89. For numerous charts, plans, elevations and other views of Río and the Coast of Brazil, 1768, see Andrew David, ed., *The Charts and Coastal Views of Captain Cook's Voyages: The Voyage of the "Endeavour" 1768-1771* (London: The Hakluyt Society, 1988), pp. 8-45.

officer land unless attended by a Portuguese officer of equal rank. Despite these anxieties and tensions, the British and the Brazilian authorities maintained a nominally cordial relationship. They did so before, during, and after the establishment of an independent Empire of Brazil under Dom Pedro I, acclaimed as Emperor in 1822. The continuing association of British diplomacy and Portuguese needs on both sides of the Atlantic was constantly sustained by the Royal Navy. Thus, when the Portuguese royal family sailed from the Tagus to Brazil in 1807 to escape Napoleon's dominance at home, it was a small British squadron which afforded security to the Portuguese fleet. The Royal Party arrived in March 1808, and Río became the new capital of the Portuguese Empire.[7]

In 1808, the state of British interests in South America was sufficiently demanding of the Navy's attention that the Brazil station was established. Heretofore, British warships cruising South American waters would have been sent on "detached," that is, special service from England, or from the North American and West Indies Station, or even from the West African or Cape of Good Hope stations. However, by November 1807, in consequence of the impending removal of the Portuguese crown from Portugal to some secure spot in Brazil, the requirements to have an adequate British naval presence on the Brazilian coast were sufficiently strong that a new administrative unit, or station, was mandatory. In consequence, on 25 January 1808, Rear-Admiral Sir William Sidney Smith, appointed first Commander-in-Chief of the squadron to be stationed off the Brazilian coast, received instructions to give "permanent protection" to "the coasts of the Portuguese dominions."[8] The object was to afford security to the Prince Regent's government, and the whole scheme, including preparing a large enough naval force of eight ships-of-the-line, was done in consequence of the decision and direction of cabinet and particularly of George Canning, Secretary of State at the Foreign Office. That fleet, which arrived at Río on 17 May 1808, became the basis of the squadron which served permanently on the coasts of South America.

The establishment of the "Brazils station" was commensurate with British diplomatic initiatives as regards Latin America. In that same year, 1808, Lord Strangford was sent as the envoy-extraordinary to the Portuguese Court in Río de Janeiro. Río's position as key port and city for the South Atlantic, eastern South America, and even trade and communications beyond Cape Horn gave Strangford an advantageous location from which to communicate with the key cities and provinces of Spanish-held South America.[9] At Río, Strangford pursued several sensitive matters with the local government. These included the attempted suppression of the Portuguese-Brazilian slave trade, and the attempted checking of Portuguese aggrandizement on the southwestern frontiers of Brazil, especially in the Banda Oriental, to which a force of military occupation had been sent in 1811. Strangford did not succeed in ending the slave trade. Nor did he succeed in keeping Brazilian forces out of the region, which became eventually the Republic of Uruguay in 1828. However, he did keep Great Britain on friendly terms with the government in Río.

Cordial relations with the local government were advanced by successive British diplomats, including Lord John Ponsonby. In Río, as in Montevideo, Buenos Aires, Valparaiso and elsewhere, British policy was peace for the purpose of profit. Thus diplomats such as Strangford, Ponsonby or Woodbine Parish in Buenos Aires and the captains of British warships visiting these principal ports sought to maintain a strict neutrality. As one captain's instructions ran in 1831: "to give countenance and protection to this extensive commerce, and to support the influence of British interests in these countries is the first and indispensible duty of the squadron placed under your command." He was also reminded that the British had £10,000,000 invested in the South American states, and that the civil state of none of these states was tranquil.[10] Moreover, France, the United States and Portugal also competed strongly for commercial ascendancy in vari-

7. Between 1816 and 1822 "Portuguese" forces and "Brazilian" forces fought campaigns in various parts of Brazil for control. The origins and success of the Brazil fleet, with no official support from the United Kingdom in these wars, is the subject of an article by Brian Vale, "The Creation of the Imperial Brazilian Navy," *The Mariner's Mirror*, 57,1 (January 1971): 63-88.

8. The South American station included within its limits the coasts and waters of South America south of the equator and west of the 30th meridian of west longitude. It also included within its boundaries the entire eastern Pacific (approximately demarked by what is now the International Dateline). Admiralty Minute, 18 December 1816, Adm. 3/88, Public Record Office, Kew, England.

9. Instructions, William Wellesley-Pole to Rear-Admiral Sir William Sidney Smith, 25 January 1808, Adm 2/1365; also, Canning to Admiralty, 25 December 1807, secret, Adm. 1/4206.

10. Rear-Admiral Baker to Captain Waldergrave, [?] April 1831, Adm. 1/35.

ous ports of South America, more especially in the Río de la Plata. In this region the Portuguese had a settlement at Colonia. In addition, Montevideo and Buenos Aires were rivals in the hide and beef export trades and also kept ambitiously watchful eyes on the interior provinces to the north drained by the Paraná River.

In these circumstances, commanding officers of British warships had to be exceedingly careful so as not to be seen as agents of British commercial bullyness. Moreover, they certainly could not take the side of the insurgents and the revolutionaries against the local legitimate government. This was the case even though the Foreign Office might have come to the conclusion that the independence of the South American states constituted the preferable course of action if British commercial and political interests were to be sustained and enhanced. To send an armed party from a warship to secure a limited objective on shore afforded a tempting response for any frustratred commanding officer who saw British property and lives at risk. In 1831, for instance, British and French naval commanders combined forces, and landed seamen and marines to protect nationals at Río. The Admiralty denounce the practice as "inexpedient and unsafe," and stated in the clearest language possible: "Remonstrance with the civil authorities on shore is the duty of the British resident."[11] "It took adroit diplomacy," wrote Rear-Admiral Sir Manley Dixon in praise of Commodore William Bowles on completion of his tour of duty in the Río de la Plata, "for the maintenance of friendly relations with the heads of the contending parties on each bank of the river; a relationship not very easy to maintain without having had a due observance to that system of neutrality, which has been so strongly recommended [by government] and so successfully adhered to." Bowles himself was well aware of the difficulties that he had had to face. Some years after leaving his duties, in 1838, he wrote to the First Lord of the Admiralty complaining that other persons of his rank in the Navy had been appointed Companions of the Order of the Bath but that he had been overlooked on what was then the Honors List. Believing it his duty to bring the Lords of the Admiralty the details of his 42 years' service, he included these particulars about his subsequent work on the South America station, 1816-1820: ". . . having been entrusted with the command of a squadron stationed in South America for the protection of British interests and commerce under circumstances of peculiar difficulty and delicacy, at a period when hostilities were actively carried on between Spain and her Colonies in that country, and when every duty, diplomatic and consular, as well as Naval, devolved upon me, not a single British subject sustained injury, or even serious molestation, within the limits of my command." He went on to point out that during that time the British government was never once involved in any dispute or unpleasant discussion with either of the contending parties. Surely these, Bowles concluded, were meritorious contributions deserving of recognition at the national level.[12]

In keeping with national policies, the Royal Navy in South American waters, apart from the unauthorized, abortive 1806-1807 expedition of Commodore Sir Home Riggs Popham, R.N., to occupy the Río de la Plata,[13] harbored no territorial designs on South America. On only the most desperate of occasions would a British naval captain send a landing party ashore—to secure a bank's assets, to disuade the patriots from making a forced levy on British merchants, or to protect a customs house against interference. In those rare instances when extreme cases of "gunboat diplomacy" were employed the Foreign Office appreciated even more fully the foolishness of intervention. Every time the British attempted armed coercion of local governments they tended to get their hands burned—as Lord Aberdeen, the Secretary of State for Foreign Affairs, learned to his regret in the Río de la Plata affair of 1845, when seeking to assist Montevideo's independence and to safeguard British trade in the face of "senseless and barbarous" interference from the Argentine leader, General Juan

11. Rear-Admiral Baker to Secretary of the Admiralty, 14 June 1831, and Admiralty Minute of 16 August 1831, Adm. 1/36; also, Bach, *Australia Station*, pp. 16-17.

12. Rear-Admiral Sir Manley Dixon to J. W. Croker, 20 April 1814, No. 156. Adm. 1/22; also Commodore W. Bowles to Dixon, 11 April 1814, encl. in Dixon to Croker, 16 April 1814, No. 152, ibid, Bowles to C. Wood, 27 July 1838, Adm. 1/1568, Cap B 174.

13. Sir John W. Fortescue, *A History of the British Army, vol. 5 (1893-1807)* (London: Macmillan, 1910), pp. 310-18 and 369-487. I am also indebted to the unpublished, anonymous paper "An Account of the British Expedition to the River Plate in 1806 and 1807" [1978] with Addendum [1983] deposited in the Scott Polar Research Institute, Cambridge. Here I also exclude the ancient British colonial interests in Guiana, or Orinoco River region.

14. Platt, *Finance, Trade and Politics*, pp. 322-23. Also, John F. Cady, *Foreign Interventions in the Río de la Plata, 1838-50: A Study of French, British and American Policy in Relation to the Dictator Juan Manuel Rosas* (Philadelphia: University of Pennsylvania Press, 1929). On Anglo-Argentine relations, see Henry S. Ferns.

Manuel de Rosas.[14] Customarily, the Navy's duties were confined to doing what it could effectively do: "to check piracy, protect trade, prevent the abuse of the right of blockade and keep any acquisitive European power from intervening."[15] Altogether the Service's task constituted a large one. Yet as long as Britain held command of the sea, real or imagined, during the wars of liberation of Spanish-held South America, Spain had no good chance of reasserting her former authority. Meanwhile, provided local governments were in agreement, the whole continent lay open to commercial penetration by British and other European traders.

Securing the sealanes and promoting the maritime ascendancy of the United Kingdom were root causes of British policy to reoccupy the Falkland Islands or Malvinas in 1832 and 1833. The islands had long been claimed by England, and at one time France and Spain had settlers and agents there. In 1820 the United Provinces of South America, otherwise Argentina, established a settlement on a spot long since abandoned by the other powers. This state of affairs continued until 1831 when, in order to protect American sealing vessels that had been interfered with, the United States corvette *Lexington*, Silas Duncan commanding, laid waste to the Argentine base Puerto Soledad, as the settlement was called, and evicted the Argentine residents and entrepreneurs who were engaged in cattle-raising, sealing, and supply whaling and sealing ships that came for refreshment and repair. The British subsequently intervened on the grounds that they never had lost their claims to sovereignty and that the Argentines were interlopers. To reassert British influence, the sloop-of-war *Clio*, mounting 10 guns and commanded by John James Onslow, R.N., was sent from Río "for the purposes of exercising the rights of sovereignty there, and of acting at the said Islands as in a possession belonging to the Crown of Great Britain." Onslow carried out his responsibilities with cold directness. The captain of the Argentine armed schooner *Sarandí*, José Pinedo, was obliged to retire in the face of overwhelming British forces, including seamen and marines landed from the *Clio*. The Union Flag was run up, and for a number of years thereafter before a British colony proper was established, Britain's lonely imperial outpost in the South Atlantic was run as "a stone frigate," that is, on-the-books of the Commander-in-Chief, South America. Argentine's aggrieved response to this British intervention fell on deaf ears: the foreign secretary, Lord Palmerston, told the Argentine minister in London, Manuel Moreno, that not only was Captain Onslow's repossession authorized but that British rights were incontestable. Further particulars on this episode and its legacies are subjects of historical inquiry elsewhere.[16]

Based on Río, the Brazils squadron also kept up an extremely important function as freighters of bullion, specie, bank notes, and bills of exchange. This little known function of the Navy is the subject of another contribution to the understanding of the peaceful benefits of the *Pax Britannica* published elsewhere.[17] Suffice it to say, the conveyance of specie or "freight" was authorized by government and controlled by regulation. In an era of periodic anarchy in Latin American affairs, H.M. warships were a symbol of security to nervous merchants and anxious creditors. The Navy was the Securicor or Wells Fargo of that age, and it suffered no "hold-ups." One British treasure-carrying vessel was lost; on occasion fraudulent practices occurred (one shipper fooled a captain by shipping lead instead of silver); and naval officers were not immune from corruption. By and large, however, the service carried on the business to its credit. Ships took on "freights" from west coast ports as far north as Guaymas and San Blas, Mexico, and from Panama, Guayaquil, Callao, Valparaiso, Buenos Aires, Montevideo and, of course, Río. The last-mentioned was the collection point for periodic shipments to Portsmouth and thence the Bank of England. Almost every man-of-war returning from Río upon completion of a three or four year commission on the South American station took home a handsome "freight."

To safeguard shipping, whether British or foreign, ranked among the principal duties of ships of the Royal Navy on this and other stations. To this end, besides policing the seas, the Navy undertook to survey them, and thus to make the waters safer for navigation and trade. Captains and navigating officers were required

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Britain and Argentina in the Nineteenth Century (Oxford: Clarendon Press, 1960).

15. G.S. Graham and R.A. Humphreys, eds., *The Navy and South America* (London: Navy Records Society, 1962), p. xxxiv.

16. Barry M. Gough, "The British Reoccupation and Colonization of the Falkland Islands or Malvinas," *Albion* (forthcoming summer, 1990). This also represents part of a book, in progress, *The Struggle for Empire in the South Atlantic*.

17. Barry M. Gough, "Specie Conveyance from the West Coast of Mexico in British Warships, 1820-1870: An Aspect of the *Pax Britannica*," *The Mariner's Mirror*, 69, 4 (November, 1983): 419-33.

to keep "Remark Books." In these they were instructed to record hydrographic information, and these volumes they had to render to the Hydrographer to the Admiralty on completion of their commission, Inshore water, high seas, coasts, islands, rocks—all were the subjects of concern of the Hydrographer. Commensurate with the increase of sea-going commerce in Latin American waters, the Admiralty published charts of the coasts and the entrances and anchorages of such key places of commercial exchanges such as Río or Valparaiso. Nonetheless, the eastern shore of South America from Trinidad to the Río de la Plata was, the British hydrographer reported in 1814, "erroneously laid down in charts and maps . . . and therefore wants rectifying,"[18] For this reason, Their Lordships ordered a general survey to be undertaken. In 1825 the Admiralty directed Captain Phillip Parker King of H.M.S. *Adventure*, accompanied by the *Beagle*, commanded by Pringle Stokes, to survey the southern coasts of South America. This famous survey, 1826-36, in which Captain Robert FitzRoy made a celebrated contribution (in succession to Pringle Stokes), resulted in the preparation of new charts and sailing directions, or pilots. These aids to navigation were a further stimulus to seaborne commerce.[19] Other specific contributions were made by individual surveyors, that of B.J. Sulivan in the Falkland Islands and the Paraná-Plata system being particularly exemplary. Other surveys were conducted by Mayne in the *Nassau* and Nares in the *Alert*. The contribution of Admiralty charts and sailing directions to safe passage of vessels in South American waters cannot be quantified. However, it is a generally understood fact that hydrography was the harbinger of commerce, and that all seaborne commerce, irrespective of nationality, benefited from this work.

Specifically, as regards the Admiralty charts of such ports as Río or Valparaiso, these documents were based on information provided from sources other than their own. The Admiralty were not going to send a British survey vessel uninvited to survey a major port of a sovereign foreign country. Thus the 1839 Admiralty chart of Río was based on a Portuguese manuscript dated 1823, and that of Valparaiso on a Spanish survey of 1790. The British government were circumspect about surveying foreign coasts, and would undertake such hydrographical inquiries provided local governments made no objections or if consent was provided.[20]

The requirements of the station always exceeded the resources available to the Commander-in-Chief. This was as true on the South American station as it was in other waters. As a learned and astute commentator in the London-based *United Service Journal and Naval and Military Magazine* put it in 1833:

> So far from a reduction taking place in the naval force of this country, there is every reason to expect an augmentation: for a moment's reflection will satisfy the most skeptical, that the Mediterranean, Portugal, Spain, and the East and West Indies are far from being in a tranquil state, and where so much British property is at stake, it behoves the Government to afford every protection. In South America the very extent of the command must always cause a respectable naval armament to be employed there.[21]

What was the "naval armament" of the South America station? In that year, one which is typical, the Commander-in-Chief, Rear-Admiral Sir Michael Seymour Bart., K.C.B., wore his flag in the *Spartiate*, a two-decker, ship-of-the line carring 76 guns, at Río. The Pacific division had its own Senior Naval Officer, Commodore the Rt. Hon. Lord J. Townshend, who wore his pennant in the frigate *Dublin*, 50 guns. A corvette or two and a couple of sloops, each mounting say 28 guns and 18 guns respectively, worked the coasts and islands on either side of Cape Horn, while a couple of brigs or schooners each mounting ten or six guns would engage in duties requiring the threat of more modest armament. In 1833 the squadron numbered eleven ships mounting a total of 374 guns.[22] The resources available to a Commander-in-Chief were always stretched to their limits by the constant demands of "showing the flag." Rear-Admiral Baker held the

18. Thomas Hurd, Hydrographer, Memo on the State of Hydrography, of May 1814, in Vice-Admiral Archibald Day, *The Admiralty Hydrographic Service, 1795-1919* (London: H.M.S.O, 1967), p. 28.

19. Rear-Admiral G. S. Ritchie, *The Admiralty Chart: British Naval Hydrography in the Nineteenth Century* (London: Hollis and Carter, 1967), chs. 12 and 14. Maps to illustrate the surveys of Magellan Straits, 1826-35, and the South American surveys, 1826-35, are on pp. 172 and 222 respectively. See also, George Basalla, "The Voyage of the *Beagle* without Darwin," *The Mariner's Mirror*, 49 (1963): 42-48.

20. Robert FitzRoy and P. Parker King, *Narrative of the Surveying Voyages of His Majesty Ships Adventure and Beagle* (4 vols.; London, 1839), 2:32.

21. *United Service Journal and Naval and Military Magazine*, December 1833, p. 531.

22. Baker to Admiralty, 20 June 1831, Adm. 1/36.

opinion that the new republics respected "nothing but actual force of arms," and he was often tempted to employ force in contradiction to the Foreign Office's strictures not to get entangled in messy matters ashore. Baker complained to the Lords of the Admiralty that he had so many requests for support that all he could do with his limited resources was to direct commanding officers to make fast cruises up and down the coast looking in at these places for a day or two at a time and passing on as quickly as possible to the next place of need.[23] In short, meagre resources were taxed to maximum limits on the South American station.

The maintenance of ships on this station, as on others, depended on supplies and stores sent regularly from England, as well as on whatever local sources were available and could be purchased at acceptable prices. Two storeships reached Río from England each year, one in January, the other in July. Until 1832, one of these vessels would sail from Río round the Horn to Valparaiso and there unload supplies directly into H.M. ships waiting to receive them. After 1832, supplies and stores were sent by private freight to the British consul at the Chilean port, who would supervise their distribution. At Valparaiso after 1843 a need existed for a permanent storehouse. However, for many years a storeship, the *Nereus*, lay at anchor there, though Chilean governments protested to the Foreign Office of the existence of this "foreign" base and did their best to get rid of it. At Callao, the port of Lima, the Navy also kept stores, especially after 1847, when the old British warship *Naiad* became a coal hulk for the Service, Meanwhile, Río continued as the main stores and supply base of H.M. ships in South Atlantic waters.[24]

Increasingly, the duties of the squadronn beyond Cape Horn began to take their own order of precedence. For years ships based on Río had used Valparaiso as their western base of operations. Ships of the squadron on three-year tours of duty would range up the western coasts as far north as Mexico; or Alta, California and occasionally even to the Northwest Coast of North America. This was an extensive station: as one Commander-in-Chief gasped, in a moment of dismay, even Bering Strait was included in his command.[25] These ships would also visit the key archipelagos of the Pacific, the Society, Marquesas and Hawaiian Islands being the most common. Here French and American rivalry, commercial, religious and political, seemed in the ascendant. By 1837 these new demands meant that a new command, the Pacific, had to be established, responsible for waters west of Cape Horn. The boundaries of the South American station were adjusted accordingly, and its duties more immediately confined to attending to the protection of British interests in Brazil and the other South American republics on the Atlantic side of the continent.[26]

The period after 1837 does not belong within the present context of analysis. Nonetheless, it may be instructive to mention that well into the late nineteenth century the British continued to base ships on Río for the protection of British interests in South America. As steam propulsion became more universally adopted in the Royal Navy after the Crimean War, the Falkland Islands acquired a new strategic value, and Río, Valparaiso, and Esquimalt, British Columbia, gained enhanced status as bases of supply. The boundaries of the South American station shifted, too, and did so according to administrative and political demands at home as well as changing geopolitical needs abroad. The types of vessels, furthermore, continued to be those for consular and police duties, and were not at all valuable for modern warfare. Gradually the British phased out their South America station, and this was partly owing to the ascendancy of the United States Navy in the Western Hemisphere. And as Britain built new capital ships—*Dreadnought* class battleships and *Invincible* class battle cruisers—so did the Lords of the Admiralty see it as less in the national and imperial interest to station smaller ships in such distant waters. In 1905 the South Atlantic station (incorporating the east coast of South America) was closed. An end had come to the old order of things, of keeping British ships on "foreign stations."[27] Nonetheless, South American waters remained vital to British trade and security, because on the east coast of the continent lay waters which formed part of the strategically significant South Atlantic Corridor, through which substan-

23. *Ibid.*

24. John Bach, "The Maintenance of Royal Navy Vessels in the Pacific Ocean, 1825-1875," *The Mariner's Mirror*, 56, 3 (August 1970): 262-63.

25. Journal of Sir Graham Eden Hamond, 16 September 1834, HAM/125, p. 7, National Maritime Museum, Greenwich.

26. Gough, *Royal Navy and the Northwest Coast*, pp. 243-44.

27. A. E. Ekoko, "British Naval Policy in the South Atlantic," *The Mariner's Mirror*, 66 (1980): 209-23, esp. 214 ff.

tial volumes of high-valued cargoes passed. The geographical position of Río de Janeiro in relationship to the wider waters of the world had never really diminished. "There is no station that occupies so central and commanding a position as Río," lamented a senior clerk of the Admiralty in 1892, who hoped for the station's reestablishment. He explained: "cruisers could be dispatched from thence, at a moment's notice, to the Pacific, China and Australia, as well as to the Cape, the east coast of Africa, India, and the Strait Settlements by cable from Whitehall with as much secrecy as dispatch."[28] Consequently, the history of the Brazils station forms one chapter in the larger chronicle of the history of Britain's relations with Latin America and more especially the naval-diplomatic influence of the world's preeminent naval service during the early years of Brazil's national history and of those of her neighbors.

28. Sir John Henry Briggs, *Naval Administration 1827 to 1892: The Experience of 65 Years* (London: Sampson Low, Marston, 1897), p. 175.

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Voyage to Canada's Arctic Islands

TOM H. INKSTER

Travel on *Nascopie* among the friendly Eskimos (Inuits), moving from a stone age society to the jet age . . .

ENTERING Hudson Strait from the Atlantic and passing through Arctic waters to the Pacific, the U.S. Coast Guard icebreaker *Polar Sea* caused considerable excitement in the summer of 1985. That episode made headlines in newspapers across Canada and the United States. It aroused public interest, created intensive investigation and brought the silent and remote Arctic closer to the world of trade, commerce and industry.

Though much attention and publicity was given to the *Polar Sea* voyage, the Arctic was explored and partly settled for many years. Sir Martin Frobisher was one of the early explorers to search for a northwest passage. In 1576, while halted by ice on the east shore of Baffin Island, he discovered interesting rocks, samples of which he took to England. Informed that they contained gold in quantity, and financed by Queen Elizabeth with 1000 pounds sterling, he set out the following year with three ships to secure more of the bright magic metal. He returned with two hundred tons of ore! When the goldsmiths realized that "all is not gold that glitters" his dream of great wealth died with failure in three attempts to find a northwest passage. Although Frobisher was the first explorer to reach Baffin Island, it was named by a much later British explorer, William Baffin, who also failed to find an Arctic route to the Orient.

The Hudson's Bay Company began operating ships into Hudson Bay in 1670. Vitus Bering, a Danish explorer in Russian employ, mapped Siberian Arctic regions prior to 1741. Coppermine River was discovered by Samuel Hearne in 1771. Captain James Cook entered the Arctic from the Pacific in 1778, hoping to make an eastward transit, but was blocked by solid ice. Sir John Franklin, after leading two expeditions into the Arctic, set out in 1845 to seek a northwest passage. The entire company of 129 men became lost. More than 40 rescue parties subsequently sought trace of them, gaining immense geographical knowledge of the Arctic. After evidence of the expedition's tragic fate was finally discovered in the 1850's there was an even greater interest in the Arctic.

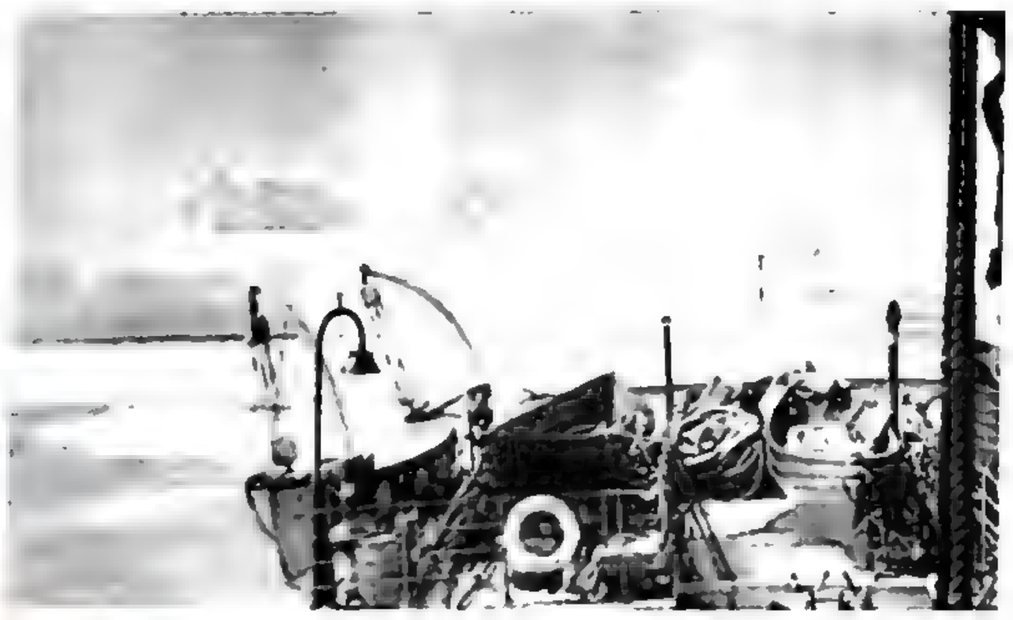
Captain James Waddell, in command of the Confederate navy's *Shenandoah*, not knowing the Civil War had ended and hoping to cause financial trouble for the Union, played havoc with New England whalers in the western Arctic for some time after General Lee had surrendered at Appomattox on April 9, 1865. At the same time, on the eastern entrance to the Arctic, in Davis Strait—named for John Davis, the British navigator who sailed through it in 1787—British whalers were almost decimated by scurvy.

The Norwegian explorer Roald Amundsen commanded the first negotiation of the Northwest Passage between 1903 and 1906. Frederick Albert Cook, an American explorer, claimed reaching the North Pole in 1908, but was discredited by Robert Edwin Peary who discovered it in 1909. Canadian born Vilhjalmur Stefansson, successfully using Eskimo techniques for survival, led several expeditions of ethnological and archeological investigation, which he reported in his book "The Friendly Arctic." The 31.6 meter-long Royal Canadian Mounted Police Arctic patrol schooner *St. Roch* was the first Canadian ship to traverse the Northwest Passage west to east in 1942 and east to west in 1944.

I had the opportunity to see these Arctic waters, and it came about during the Depression in 1933 when I was on the Great Lakes freighter *Beaverton*. Working 4 hours on and 8 hours off, I was paid the munificent sum of one dollar per day by Canada Steamship Company to keep steam up on the *Beaverton*'s two large boilers, with very poor coal, and no pay or food while in Montreal during the three or four days required to discharge grain at various elevators.

One time in Montreal the *Nascopie* was berthed at a nearby dock, taking on cargo and preparing for her annual voyage to the Arctic. Operated jointly by the

Bound for the Arctic, the *Nascopie* clears a berg. Photo credit: Tom H. Inkster.



Tom Inkster went over the side to photograph the *Nascopie*, fast in the ice, waiting for an opening. Soon the ship would again be pushing forward. Photo credit: Tom H. Inkster.

Canadian Government and the Hudson's Bay Company, the *Nascopie* carried replacement personnel to Arctic stations. Mail and supplies were delivered to police, traders, medical installations and missions at Arctic settlements on that once-a-year voyage, and at every port of call it was a time for get-together by whites and Inuits (Eskimos). Now there is regular mail and supply service, thanks to the airplane and the motor sled replacing the vanishing husky. No longer must people living in the Arctic have to content themselves with ancient newspapers and constantly guard their yearly "medical" supply.

Looking at the *Nascopie* I realized it was a ship bound for strange places and adventure. I thought about the miserable conditions on the *Beaverton*, but most of all I thought about the *Nascopie*. Why not stow away on her. Conditions could not be any worse. And I would get to see the Eskimos again. I packed my bag and went over the side of the *Beaverton*.

The *Nascopie* steamed down the St. Lawrence, passed close by historic Quebec City, and on to Father Point on the Gaspe Peninsula. Here, where the mighty river spills into the treacherous Gulf of St. Lawrence, the pilot was put ashore and the ship headed for the Strait of Belle Isle. Knowing we were clear of Canada, Labrador and Newfoundland then a joint crown colony, I left my hiding place in the paint locker and made my presence known.

An amazed chief officer marched me before an astonished captain who, after commenting that only a complete lunatic would stow away to the Arctic, ordered me to the firehold. Later, I was informed that the Hudson's Bay Company Commissioner, who happened to be on board, wanted to have a word with me. I told him about amusing experiences in Alaska, the Orient and South Pacific, and when purser on a Mackenzie River steamboat operating to the Arctic. Soon he was laughing, with the result that I became one of the crew, supervising freight movement at every port of call.

Two tall bergs greeted us as the snow-capped hills of Newfoundland faded from view. Currents carry great masses of ice and bergs down the Atlantic, a menace to ships, and now to oil rigs. Since the sinking of the "unsinkable" *Titanic* in 1912, patrol vessels warn ships and oil rigs of dangerous ice conditions in their area.

Four days after leaving Montreal we hove to at Cartwright, the main port of Labrador, named after George Cartwright who established a settlement in 1770. Leaving there, two days later, we came upon a large pod of small whales, called "roundheads" and quite common in waters north of Newfoundland.

Very tanned Eskimo women pose to be photographed. Photo credit: Tom H. Inkster.

Eskimos carrying supplies up the beach to a warehouse. The *Nascopie*, at anchor, is in the distance. Photo credit: Tom H. Inkster.

Then we entered the ice. A great field of ice as far as the eye could see. The ship had to buck her way through. Often we would drift with the floe, waiting for an opening. The the quietness was like being in a catacomb. On one occasion I went over the side to photograph the *Nascopie* caught in the ice, waiting for an opportunity to move ahead.

We eventually got through the ice and around Cape Chidley to Port Burwell at the northern tip of Labrador, on a very small bay, surrounded by towering hills of solid rock. The *Nascopie*, as always, anchored offshore and two large cargo boats were lowered to transport the freight ashore. As only those handling cargo and the ship's officers could go ashore, others of the crew served the entire voyage without ever talking to an Eskimo or a trader.

From the beach, Eskimos packed huge crates to the warehouses. The job was harder at Port Burwell than

Cutting in rock during 1747 by early Arctic adventurers. Photo credit: Tom H. Inkster.

Early cutting in Arctic rock. Evidently, John Kelley never returned to the Isle of Wight. Photo credit: Tom H. Inkster.

at other ports, as the freight had to be carried up a steep bank. Men did the work, but at other places women worked equally as well, if not better. They would stop for a "mugup" of tea every little while. The Inuit (Eskimo), at that time, cared not a hoot for liquor. He would drink it and cut up some fancy capers afterwards, but he preferred tea—by the bucket.

It was surprising to have mosquitoes flitting about in cloud formation with ice on the banks all around us. Though it was warm, the Eskimos never shed a garment, apparently wanting to display the entire wardrobe. Oddly enough, they did not mind the heat or mosquitoes as much as we did. We get our tan in summer, but the Eskimo gets his from the glare of the sun on the ice in springtime while wearing an ivory eye protector with a mere slit across its center.

I photographed a few stray seals and a big walrus that was eating his meal as we moved close by. It was a pleasant surprise to get a close-up of a polar bear as the *Nascopie* fought her way through the ice to Lake Harbour on Baffin Island.What caused much comment, however, was the chief steward's pet presenting the ship with three jet black kittens.

Approaching Lake Harbour we beheld the letters H B C on the hillside back of the settlement. There is a tale of a traveler asking what the letters meant, to be told by a wag "Here before Christ." The Hudson's Bay Company was certainly among the first Europeans in the Arctic. Eskimos had gathered from near and far for the greatest event of the year, and their tents occupied all the available space between the cemetery and the beach. We watched Eskimo boys playing football, but what held my interest was the Anglican Bishop performing a marriage ceremony for a

Tom Inkster with two Eskimo belles. Photo credit: Tom H. Inkster.

couple that had been united in the Eskimo custom for many years.

Despite the fact that some Eskimos never hesitate to tack unsavory names on neighboring Indian tribes, young educated and traveled Eskimos have, in recent years, objected to the label "Eskimo," claiming it was applied to them by Algonquian Indians and means "eaters of raw meat." If the word was meant to be derogatory, it was accurate as the high percentage of Eskimo diet was raw meat and, in comparison with most other cultures, still is. Now the Canadian Government has decided that all northern native peoples be known as "Inuits."

In Greenland the Arctic people call themselves "Kalaallit," in the Mackenzie Delta "Inuvialuit" and in northern Alaska "Inupiat." The name "Inuit" (or "Inuk") however, is given by natives to themselves only in Labrador, northern Quebec and eastern Northwest Territories. Regardless of the different names adopted by peoples in various areas, our Arctic friends will always be "Eskimos" in my book.

Leaving Lake Harbour the *Nascopie* steamed to Wakeham Bay on the mainland, then to Sugluk West and Wolstenholme where the traders told us about an Eskimo affair of the previous winter. While the others were out hunting, a lazy fellow, who feigned illness and refused work of any kind, lived with their wives. No time is lost with the Eskimo judicial system. While we were there, police and government officials were unable to solve the strange death of an Eskimo.

Around the Mackenzie Delta I had met a number of Eskimos who could speak English quite well. Here, few indeed could understand a word of it. However, the Eskimo is quick to grasp. A few motions of the hand and he will do something, most times what is wanted. While supervising the handling of freight from the cargo boat, I would often say "Okay." Ere long each man was saying the word at the proper time. I tacked the name "Jumbo" on a good natured robust youth. Quickly they picked it up and I am reasonably sure that he was called by that name ever after.

If I failed to impress the young Eskimos who learned English in the missions and were mostly interested in radio and movie stars they read about in magazines, I got on nicely with their elders. The Eskimo police interpreter translated for me, and I was completely fascinated by hunting ordeals and old legends they related. They presented me with pieces of ivory and stone carvings that money could not buy. Friendship is something to be cherished by the Eskimo, who makes giving a gracious art.

I asked the police interpreter if I might photograph his family, and he was pleased to oblige. When they appeared, his very pretty wife was wearing a tam and plaid skirt and the child, instead of being carried on her back, was being held by the father, who had changed to a business suit. My photograph was a failure, but I cherish it.

There is no mystery about sex with young Eskimos, and they do not have any prenuptial worries. In these changing times some young folks arrange their marriage, but many continue to follow the ancient custom of having it arranged by the parents. Payment of the dowry is made at the time of the contract and the bal-

ance is paid when the children become of age. Eskimo girls are brought up to respect their husbands from their earliest years and when they reach puberty they start living together as a matter of course.

Strange is the world of the Eskimo. Their superstitions and legends may have originated in Mongolia, from whence many people believe they came. Industry and the ability to hunt successfully form the foundation of their continued existence. They are skilled craftsmen, geniuses with metal and their mechanical sense is a mystery. Bob Flaherty, who made the first films of Eskimos, had a camera that went out of kilter. An Eskimo, who had never seen a camera before, repaired it!

Captain John Matheson, of Edmonton, made a number of small auxiliary schooners for the Eskimo trade. They were shipped by rail to Fort McMurray, then down the chain of rivers and lakes to Aklavik where each boat was sold to a group of more prosperous Eskimos. Roy Nourse, the mechanic sent to instruct them had little difficulty. He would take three or four Eskimos and instruct each one on a particular part of the engine and told me, humorously but seriously, that they soon knew more about the engine than he did.

The finest quality of the Eskimo is his character. He has a keen sense of humor and by natural gifts and temperament is the most admirable, certainly the most interesting and most misunderstood and misrepresented of all the native races in America. From the days of Sir John Franklin to our time, every man who has met them and enjoyed their hospitality has spoken of them kindly. The Eskimo is generous to the very last degree and his word is his bond. Without any religious standard or set creed, he has a code of ethics we might well emulate. One of the unwritten laws forbids him to turn the necessity of another to his own advantage.

On leaving, Amundsen's farewell to his Eskimo friends was, "Goodbye, my dear, dear friends. My best wish for you is that civilization may never reach you." Civilization has not only reached them, it has overwhelmed them. In a handful of recent years the Eskimo has been jerked from a stone age society into the jet age. Suddenly the old family unit and simple hunting life has been disrupted. The transition from ancient to modern has been beneficial, though painfully upsetting.

Canada's Eskimos, 13,000 of them, are in the hectic process of changing from a race of nomads into settled communities of wage earners. There are now oil drillers, carpenters, miners, mechanics, clerks, airline pilots and clergymen. Canada is giving bountiful assistance through blind and disability allowances, security in old age, and other services. Health programs have reduced infant mortality and tuberculosis. There are numerous profitable Eskimo cooperatives. No longer huddled in an igloo with a belly full of blubber, the Eskimo now enjoys a full larder with canned goods and many of the white man's pleasures and comforts, with all the accompanying evils of civilization.

A charming Eskimo woman with her child. Photo credit: Tom H. Inkster.

Eskimos captivated my interest when ashore, and aboard ship the Newfoundlanders were a fund of information. Until Newfoundland became Canada's tenth province, in 1948, only a man of means could afford to give his children anything resembling an education,

Eskimo women join men to unload freight from the supply ship. Photo credit: Tom H. Inkster.

A *Nascopie* officer gives an Eskimo girl a helping hand. Photo credit: Tom H. Inkster.

there being no public schools. Of the entire crew from Britain's oldest colony, only the ship's officers and two or three seamen could read and write.

Night after night, I read to the "Newfies" from books and magazines. Their wholehearted gratitude embarrassed me. I was amply repaid by their first hand accounts of sealing, all of them having been "to the ice," their expression for the once-annual seal hunt. One of the amazing phenomena of nature is that practically all the hair seals of the North Atlantic are born within a day or two of February 28th, which is called "the seal's birthday." As the ice pack begins to break, instinct summons them north, and the ship must get to the ice before the herds of harp and hood seals leave.

Sealing is dangerous work and many men have been lost with their ship, or frozen to death when cut off from their ship by fog or falling snow. Depletion of the great herds through ceaseless slaughter finally caused an outcry that brought government restrictions. Sealing vessels sailed from St. John's "to the ice" for the last "organized hunt" in 1971.

Days passed quickly. After numerous calls at settlements on the various Arctic islands, affairs were completed at Ellesmere, the most northern island, and the *Nascopie* started on the long haul to her home port of St. John's, Newfoundland. Not wanting to be stranded there, I bade farewell to the "Newfies" and left the ship at Charlton Island.

On the Hudson's Bay Company motor boat *Fort Amadjuak* I reached Moosonee where the Bay Company had their base of operations before steamboats and railroads opened up the entire country. I talked with the aged blacksmith who remembered when the Company's sailing ships brought trade merchandise from England, returning with bales of fur. His telling of those times long past was better than reading a book about the Company of Gentlemen Adventurers trading into Hudson Bay. Leaving Moosonee, I traveled on the Timiskaming and Northern Ontario Railway through North Bay to Toronto.

Nascopie ended her long eventful and hazardous service in 1946 when wrecked on an uncharted reef off Beacon Island, at the entrance to Dorset Harbour. She had carried Newfoundlanders to the ice for seal hunting, and supplied police posts, missions and traders in Arctic settlements. She was in meritorious action during World War I, sinking a German submarine. Loss of that grand old ship was like losing a dear friend.

Since being to the Arctic Islands I have been around the world in ships of various design and of numerous nations (passenger style), seeing some weird and wondrous sights. My most memorable voyage, however, was in the *Nascopie*, with the happy Newfoundlanders and meeting the friendly and remarkably interesting Eskimos.

Great changes have taken place in the Arctic since my *Nascopie* days. The airplane and motor sled have been a boon to residents. Oil has been found in Beaufort Sea, and mineral exploration and development is taking place in several areas. Following the voyage of

the *Polar Sea*, mapping a sea lane through the ice at the top of the world, scientific research has increased. Transportation has improved, and adventurers journey with and without dogs over the Polar ice. The latest unusual travel fad is by plane, landing on the ice at the North Pole, and Canada is constructing a large icebreaker—costing 320 million dollars—for Arctic patrol and rescue service. The *Polar Sea*, while upsetting northern tranquility, created activity that has resulted in a new Arctic.

Tom Inkster was purser of a MacKenzue River steamboat operating to the Atlantic Coast. On the President Grant *he was in the Orient and South Pacific, and went to the Bering Sea fishing grounds on the* Glacier. *During the Great Depressions he went to Canada's Arctic Islands on the* Nascopie, *and with the start of World War II went overseas on the* Empress of Canada, *later sunk by a German submarine. Retiring in Seattle he and his wife made many voyages around the world on ships of various nationalities. He now lives in Victoria, British Columbia.*

The Battle for Convoy TM 1, January 1943

DAVID SYRETT

THE Allies won the Battle of the Atlantic in 1943. The statistics speak for themselves. In the first four months of 1943 the Allies lost 264 merchant ships to German U-boats[1] while destroying 54 U-boats.[2] However, in the next eight months the Allies lost 199 merchant ships amounting to 1,069,129 tons[3] while the Germans lost in the same period 238 U-boats.[4] This clearly shows that by the end of 1943 the Allies had the upper hand in the Battle of the Atlantic. In hindsight the statistics are clear cut. But at the beginning of 1943 to the Allies nothing was clear except the fact that they were losing a huge number of merchant ships to attacks by German U-boats. Perhaps one of the best examples of how close the Allies came to defeat in the Battle of the Atlantic was the almost complete destruction of Convoy TM 1 by German U-boats in January 1943.

At the end of November 1942 the Admiralty estimated that "over 200,000 tons of oil per month" were being sent to Northwest Africa and the Western Mediterranean "by round-about routes which involve uneconomical use of tanker tonnage at a time when the sufficiency of tankers for the war effort generally is seriously in doubt." In an attempt to achieve a more economical use of tankers it was proposed to set up a series of tanker convoys running directly from the West Indies to the Western Mediterranean.[4a] Convoy TM 1 would be the first in this series. At the beginning of December 1942 the Admiralty had come to the conclusion that four escort carriers should be deployed to provide continuous air support to the Trinidad-Gibraltar convoys.[5] But owing to the shortage of escort carriers, TM 1 was not to be escorted by an escort group built around an escort carrier, but rather for air support had to depend on shore based aircraft. The U.S. Navy at the beginning of 1943 had a number of PBY Catalina and PBM-3 Martin flying boats based at Trinidad.[6] The PBY Catalina had an effective operational patrol range of about 600 miles and the PBM-3 Martin had an even shorter range than the PBY Catalina.[7] British anti U-boat aircraft at Gibraltar had an operational patrol range of about 600 miles.[8] So if TM 1 were to be directly routed to Gibraltar from Trinidad then most of the voyage would be made without any air support for the convoy. The planners at the Admiralty of the route of TM 1 did not foresee the grave risks they were running if TM 1 encountered a large number of U-boats without air support. At the end of December 1942 the staff officer in the Admiralty, who compiled the "Monthly Chronological History and Merchant Shipping Casualties," noted "that *WITHOUT THE ASSISTANCE OF AIR COVER*, surface escorts are *physically incapable* of warding off concerted attack by a *PACK* of U-boats, whose numbers exceed a ratio of 2 to 1 of their own numbers."[9] Yet as late in the war as the end of 1942 there were numerous Allied officers and officials who did not understand the importance of aircraft in combating U-boats attacking convoys. TM 1 would become a monument to this ignorance.

Formed at Trinidad during the last days of December 1942 TM 1 consisted of nine tankers[10] escorted by

1. S.W. Roskill, *The War at Sea* (London, 1956), vol. II, p. 485.

2. Admiralty Historical Section, *The Defeat of the Enemy Attack on Shipping, 1939-1945* (London, 1957), vol. IA, pp. 256-258.

3. Roskill, *op. cit.*, vol. II, p. 485; *Ibid.*, vol. III, part 1, p. 388.

4. Public Record Office, ADM/199/2084, f. 525. Hereafter this archive will be cited as PRO.

4a. *Defeat of the Enemy Attack. . . .*, vol. 1A, pp. 258-264.

5. PRO, ADM/199/2084, f. 573.

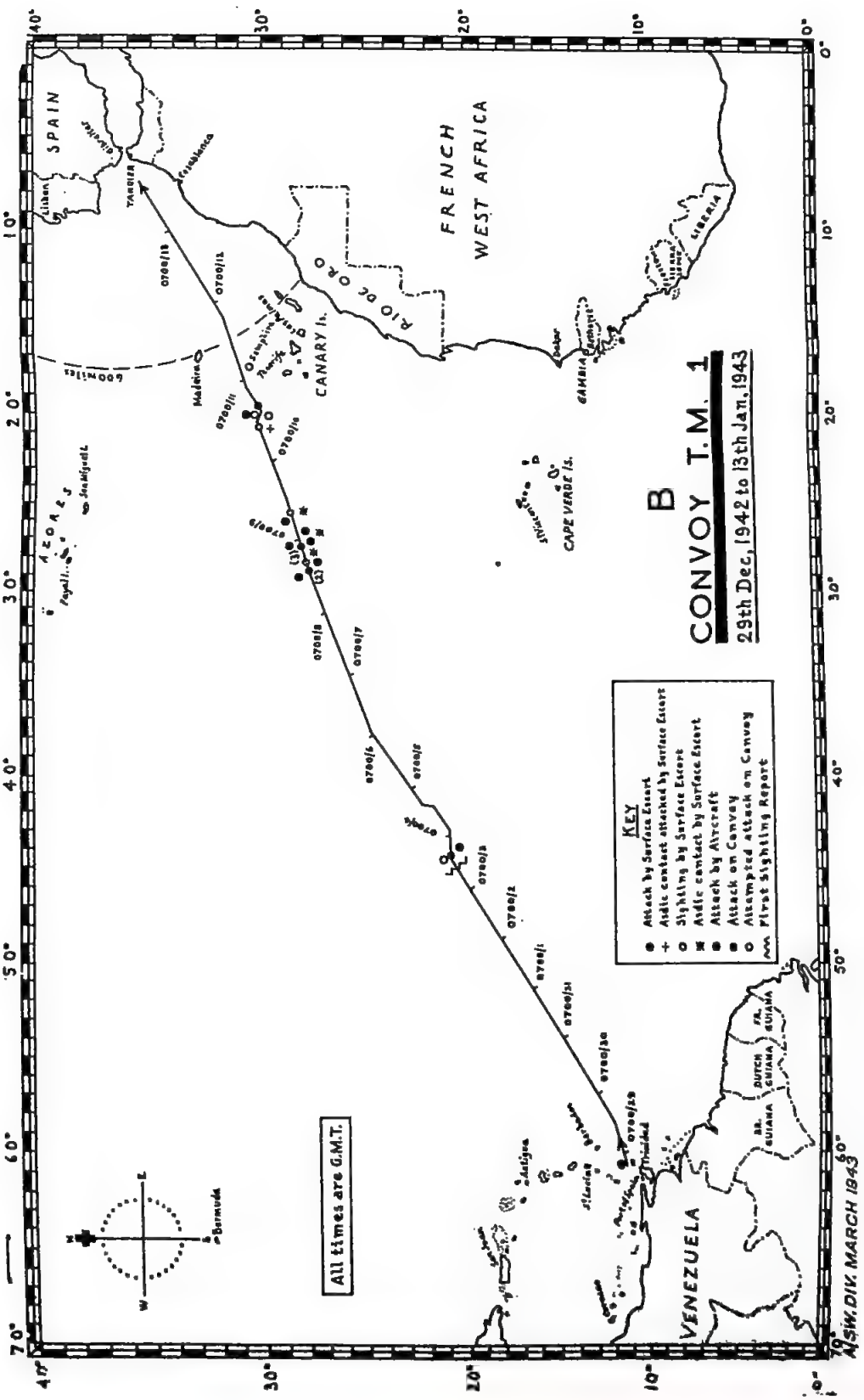
6. Naval Historical Center, Washington Navy Yard, Washington, D.C., "Location of U.S. Naval Aircraft, 6 Jan. 1943." I wish to thank Dr. Dean C. Allard, Head, Operational Archives, Naval Historical Center for supplying me with this information.

7. Loenard Bridgman, ed. and comp., *Jane's All the World's Aircraft, 1943-44* (New York, 1945), pp. 176c-177c, 201c.

8. PRO, ADM/199/149, f. 14.

9. PRO, ADM/199/2048, f. 533.

10. *Albert F. Ellsworth, Oltenia II, British Vigilance, Norvik, Minister Wedel, Venja, British Dominion, Empire Lytton, Cliona.* PRO ADM/199/719, Disposition of Convoy during Attacks.


B
CONVOY T.M. 1
29th Dec, 1942 to 13th Jan, 1943
KEY
Attack by Surface Escort
Aadic contact attacked by Surface Escort
Sighting by Surface Escort
Aadic contact by Surface Escort
Attack by Aircraft
Attack on Convoy
Attempted attack on Convoy
First Sighting Report
All times are G.M.T.
SPAIN
FRENCH WEST AFRICA
CANARY Is.
CAPE VERDE Is.
VENEZUELA
DUTCH GUIANA
BR. GUIANA
FR. GUIANA
A.S.W. DIV. MARCH 1943

Escort Group B5 commanded by Commander R.C. Boyle, RN, who was also the captain of the destroyer HMS *Havelock*. The remainder of Escort Group B5 were the corvettes HMS *Godetia*, HMS *Pimpernel*, and HMS *Saxifrage*.[11]

Right from the beginning things went wrong for TM 1. When Escort Group B5 arrived at Trinidad from New York on 27 December 1942, HMS *Godetia* had developed two defective boilers one of which was repaired before the convoy sailed. Owing to a lack of convoy commodores[12] at Trinidad the master of the tanker *Olentia II* was appointed commodore and the master of the tanker *British Vigilance* was assigned to be vice commodore of the convoy. TM 1 did not depart from Trinidad until 1800 on 28 December because the tankers were not ready to sail before then and when the convoy did put to sea the tankers *Empire Lytton*, *Vanja*, and *Cliona* remained in port. At sunset on 28 December the tanker *Cliona* joined the convoy, but immediately developed engine trouble. HMS *Godetia* was ordered to remain behind and join the convoy on 29 December escorting the *Empire Lytton* and *Vanja*.[13]

During the night of 29 December the great value of air support during a convoy battle was demonstrated when a U.S. Navy PBY Catalina aircraft, based in Trinidad, sighted a U-boat on the surface of the water about twenty miles east of TM 1. As the American aircraft moved into a position to attack the U-boat the vessel submerged. Then the aircraft flew over the convoy and informed Boyle of the position of the U-boat. The PBY Catalina continued to patrol around TM 1 and fifty five minutes after the first sighting, as the aircraft was closing with the stern of the convoy, it again sighted a U-boat on the surface which was most likely the same one which had been forced to submerge. The U-boat was attempting to get into a position to torpedo a straggler. The American aircraft attacked this U-boat from a height of fifty feet with four depth charges forcing the enemy vessel to submerge and lost contact with TM 1. The next four days TM 1 proceeded slowly in a general northeast direction encountering headwinds and adverse currents. HMS *Godetia* repaired her second boiler, but lost the use of her radar when a 2,000 volt transformer which could not be replaced at sea burned out. The tankers during this period continued to have engine troubles and to leave trails of oil in their wakes.[14]

The second enemy sighting of TM 1 was "fortuitous" and was made by the U-514, one of the two U-boats outward bound for the West Indies, at 1630 on 3 January at 20° 27″N, 45° 21″W. The U-514 was given permission to attack and was ordered to "stick at it without fail." The other U-boat, the U-125, was ordered by BdU [Befehlshaber dar U-boote] to attack the convoy, but never made contact with TM 1.[15] Allied naval intelligence quickly learned of the U-514's sighting report and radioed Boyle that the position of TM 1 was known to the enemy.[16] After receiving reports from the Admiralty that TM 1 had been sighted Boyle decided that it was of the utmost importance to refuel the convoy's escorts. However, the refueling of the escorts was broken off after HMS *Havelock* had received only six tons of fuel from the tanker *Norvik* because of heavy seas.[17]

During the evening of 3 January TM 1 suffered its first casualty from enemy action. At 2145 the U-514 made a surface attack on the convoy and torpedoed the tanker *British Vigilance* which exploded in a sheet of fire but did not sink. The convoy's escorts conducted a *raspberry*[18] during which star shells were fired, but the British warships failed to make contact with the enemy. At the same time as TM 1's escorts were conducting the *raspberry* the U-514 was passing through the convoy on the surface and was fired at with 20 mm guns by the tanker *Empire Lytton* who claimed to have hit the U-boats conning tower. After completing the *raspberry* HMS *Saxifrage* rescued 27

11. PRO, ADM/199/2016, Analysis of U-boat operations in the Vicinity of Convoy TM 1, 3rd-11th January, 1943.

12. Convoy commodores were usually retired navy flag officers embarked on one of the ships in a convoy and in command of all the merchant ships in the convoy while being under the command of the commander of the naval escort.

13. PRO, ADM/199/719, Co *Havelock* to Director of A/S Warfare, 14 Jan. 1943.

14. Naval Historical Center, "The Atlantic Fleet Anti-Submarine Warfare Officer to C-in-C U.S. Atlantic Fleet, 17 March 1943, and Anti-Submarine Action by aircraft, 29 Dec. 1942."

15. PRO, ADM/223/16, p. 11.

16. PRO, ADM/199/719, Admiralty to TM 1, 3 Jan. 1943.

17. PRO, ADM/199/719, Co *Havelock* to Director. . . 14 Jan. 1943.

18. A *raspberry* is a tactic employed by escorts to illuminate a U-boat on surface usually following an attack on the convoy. The escorts steer for the position the U-boat is thought to be in, firing star shells and/or flares in an attempt to locate the U-boat and attack the enemy vessel.

men belonging to the *British Vigilance* out of a total crew of 54 men.[19] The *British Vigilance* remained afloat until the next day when the drifting wreck was sunk by two torpedoes fired by the U-105.[20]

After attacking the *British Vigilance* and escaping from TM 1's escort, the U-514 failed to regain contact with the convoy. This failure was most likely owing to the U-boat having trouble with her radio and diesel engines which reduced her surface speed to about thirteen knots.[21] However, the BdU continued, without success, to order the U-514 to regain contact with TM 1 with the result that the Germans had at this time, according to Allied naval intelligence, "only the vaguest idea of the composition, whereabouts, and course of the convoy."[22] Later the commander of the U-514 was taken to task for his failure to remain in contact with TM 1.[23]

During the morning of 4 January TM 1 changed course to 055 degrees. Steering a more eastly course was necessary for TM 1 in order that the convoy would pass through the northeast trade winds into calm water to refuel the escorts.[23a] This was pressing because, for example, HMS *Saxifrage* had only four days of fuel remaining and HMS *Havelock*, because of rough seas and before the convoy's change of course, had been damaged in the bow by a collision with the tanker *Norvik* while attempting to refuel. During the next three days while TM 1 continued steaming towards Gibraltar the convoys escorts were refueled and there was no contact with the enemy.[24]

Even before the U-514 had damaged the *British Vigilance* and lost contact with TM 1, the BdU ordered the *Delphin* group of U-boats to form a patrol line across what was thought to be the course of TM 1. But several hours later the U-182 sighted a west bound Allied convoy which was apparently proceeding towards the *Delphin* group and BdU ordered the group to locate and attack this convoy instead of TM 1. Then on 5 January because of the failure of the U-182 to remain in contact with the westward bound convoy, which was discovered to be a fast convoy, the BdU ordered the *Delphin* group, consisting of the U-381, U-571, U-442, U-620, U-575, and the U-436 to form a new patrol line across what was believed to be the couse of TM 1.[25] The Allies were not able to decode any of these orders from the BdU to the *Delphin* group until 0517 on 9 January which was too late to alter the course of TM 1 so that it might pass around one of the flanks of the German patrol line.[26]

On 8 January the *Delphin* group's reconnaissance or patrol line was some 180 miles in length, steering 245 degrees for about ten to twelve hours and then turning around on to a reverse course for a similar period of time. The possibility of German U-boat's patrol line being set up to intercept TM 1 had been "appreciated" by Allied naval intelligence, but because of a lag in decoding German radio signals and of the Germans setting up the *Delphin* group's patrol line about 650 miles west and south of the Canaries and about the same distance northeast of the last reported position of

19. PRO, ADM/199/719, Co *Havelock* to Director. . . . and Appendix A, 14 Jan. 1943.

20. Jurgen Rhower, *Axis Submarine Successes*, 1939-1945 (Annapolis, Md., 1983), p. 145n.

21. PRO, DEFE/3/707, U-514 to BdU, intercepted 0303, 1537/6/1/43.

22. PRO, ADM/223/16, pp. 11-12.

23. PRO, DEFE/3/707, BdU to U-514, intercepted 6/1/43.

23a. There is some confusion over the course followed by TM 1. In a memorandum written on 13 January 1943, T.R. Dale, SOMC states that TM 1 was on several occasions ordered by the Admiralty to change course to avoid groups of U-boats. But TM 1's course was not changed because the escorts did not pick up the Admiralty's radio transmissions. Ottawa, National Defense Headquarters, Directorate of History, D.Hist. file 8280/TM 1. I would like to thank Dr. W.A.B. Douglas for this information. John Winton, *Ultra at Sea* (London, 1988), pp. 110-111 maintains that the BdU through "agents" at Trinidad knew that the TM 1 was bound for Gibraltar. Further that on 3 January 1943 the Admiralty ordered by radio that TM 1 steer a more southerly course and that Boyle decided to ignore this order so that he could refuel the ships of the escort. There are a number of problems with this account of TM 1. It is difficult to comprehend a commander in the Royal Navy ignoring a direct order from the Admiralty. The track chart of TM 1 shows that the convoy turned on a more southerly course on 3 January and then resumed its original course towards Gibraltar. PRO, ADM/199/1491, f. 14. This change of course was owing to the need to refuel the escorts. There were three major investigations of TM 1. A Board of Inquiry was held at Gibraltar. See note 61. There was the Admiralty's Anti-Submarine Warfare Divisions analysis of the battle. See note 37. Plus the Admiralty's Submarine Tracking Room's analysis of the battle. See PRO, ADM/223/16, pp. 11-20. In all three of these analysis of the Battle for TM 1 there is no mention of the Admiralty ordering the convoy to change course. Further, I cannot find copies of these radio transmissions in the PRO and Mr. Winton's book is not footnoted and does not have a bibliography. As for the agents in Trinidad, it is highly unlikely that, at the beginning of 1943, the Germans had a functioning intelligence operation on the island.

24. PRO, ADM/199/719, Co *Havelock* to Director . . . and Appendix B, 14 Jan. 1943.

25. Canadian National Defense Headquarters, Directorate of History, "Gt. Britain, Admiralty, Naval Intelligence Division, English Translation of Befehlshaber der U-booten War Diary," pp. 6-10. Hereafter this document will be cited as BdU War Diary.

26 PRO, DEFE/3/707, BdU to *Delphin Group*, intercepted 5/1/43. Decoded 0517/9/1/43. For reasons which are not known the U-125 and the U-514 did not join the *Delphin* group.

TM 1, Allied naval intelligence was taken by surprise. Basically in the absence of *ultra* intercepts Allied naval intelligence did not think the Germans would set up a patrol line so far north and east as they did for the purpose of intercepting TM 1.[27]

During the afternoon of 8 January TM 1 crossed the *Delphin* group's patrol line and was sighted and reported to the BdU by the U-381 at 1503. Upon receipt of this report BdU ordered the U-511, U-522, U-181, and the U-134 to join the *Delphin* group.[28] However, the U-381 lost contact with the convoy at 1950. Nevertheless, the U-571 at 2000 regained contact with the convoy at 27° 51″ N, 28° 46″ W, but was driven away by the TM 1's escorts.[29]

The attack on TM 1 by the Germans during the evening of 8 January could not, from the British point of view, come at a worse possible moment. Unknown to the British at the time HMS *Havelock*'s HF/DF was broken and the British were, thus, unable to take bearings on the U-boat radio transmissions.[30] HMS *Godetia*'s radar had not been working almost from the beginning of the voyage and before the first major attack by the Germans on TM 1 HMS *Pimpernel*'s radar "had developed irrepairable defects and was working at a low state of efficiency." For all practical purposes half of TM 1's escorts were without working radar sets when the Germans attacked the convoy on the night of 8 January.[31]

At 2139 the U-436 attacked TM 1 and claimed to have sunk with torpedoes three tankers.[32] The basis of this claim was no doubt the setting on fire the 8,309 ton tanker *Albert L. Ellsworth* after being hit by a torpedo at 2139 and the sinking of the 6,394 ton tanker *Oltenia* at 2140.[33] Immediately after the German attack the escorts conducted a *raspberry* and HMS *Havelock* made contact with a U-boat which was probably the U-436. The British destroyer dropped 14 depth charges and then shortly afterwards an additional five depth charges were dropped, but the contact was then lost.[34]

The tanker *Albert L. Ellsworth* after being hit by a torpedo, fired by the U-436, caught fire from "amidships aft," but the crew managed to get off the ship and were picked up by HMS *Havelock* without loss of life. The abandoned *Albert L. Ellsworth* drifted astern of TM 1 and the next morning was sunk by the U-346 with gunfire. The *Oltenia II* when hit by two torpedoes from the U-436 exploded and sank within two minutes and seventeen members of her crew were lost including her master, A. Laddle, who was also the convoy's commodore.[35] HMS *Havelock* and HMS *Saxifrage*, after picking the survivors from the two tankers, rejoined the convoy.[36]

While the surviving crew members of the two tankers were being rescued HMS *Pimpernel* at 2214 obtained a sonar contact with a U-boat on the convoy's starboard quarter. As HMS *Pimpernel* was preparing a depth charge attack on the sonar contact a U-boat was seen approaching the convoy on the surface. The British corvette fired a star shell and one round from her 4″ gun and the U-boat dived. Sonar contact was quickly obtained and HMS *Pimpernel* attacked the U-boat at 2233 dropping a pattern of ten depth charges on the enemy craft. Two further attacks were carried out without effect and then the British warship broke off the action and returned to the convoy.[37]

TM 1 during 9 January saw no relief from U-boat attacks. At 0318 9 January, HMS *Pimpernel* "heard hydrophone effect from a U-boat on the surface" and several minutes later got a sonar contact with a U-boat at a range of 1,400 yards but lost contact before she could attack. Again at 0505 HMS *Pimpernel* obtained contact with a U-boat, but this contact was also lost before an attack could be mounted.[38] Ten minutes later at 0515 the tanker *Minister Wedel* was hit by two torpedoes and a few seconds later the tanker *Norvik*

27. PRO, ADM/223/16, pp. 12-13.

28. BdU War Diary, p. 14.

29. PRO, ADM/223/16, pp. 12-13.

30. PRO, ADM/199/2016, Analysis of U-boat Operations. . . , p. 13.

31. PRO, ADM/199/716, Co *Havelock* to Director. . . , 14 Jan. 1943.

32. PRO, ADM/223/16, p. 14; DEFE/3/708, intercepted 2140/9/1/43.

33. PRO, ADM/223/16, p. 14.

34. PRO, ADM/199/719, Co *Havelock* to Director. . . and Apendix A, 14 Jan. 1943.

35. PRO, ADM/199/719, Co *Havelock* to Director. . . and Appendices A and I, 14 Jan. 1943.

36. PRO, ADM/199/719, Co *Havelock* to Director. . . and Appendix A and Preliminary Interrogation by S.O. (1) Gibraltar; Rohwer, *op. cit.*, p. 145n.

37. PRO, ADM/199/719, Co *Havelock* to Director. . . and Appendix G; ADM/199/2016, Analysis of U-boat Operations. . . , p. 5.

38. PRO, ADM/199/2016, Analysis of U-boat Operations. . . , p. 6.

was hit by another torpedo. Both tankers had been hit on the starboard side, caught fire, but did not sink. The U-522 which had carried out the attack then passed through TM 1 and was fired upon with no effect by some of the tankers of the convoy.[39]

Several minutes after the U-522's attack on TM 1 the convoy's escorts conducted a *raspberry*. Several sound and visual contacts were made with U-boats who were then attacked with gunfire and depth charges without any results. At 0625 the tanker *Empire Lytton* was hit on the starboard bow by a torpedo fired by the U-442. After the torpedoing of the *Empire Lytton*, TM 1's escorts carried out a series of offensive sweeps, but again with no results.[40] After the torpedoing of the *Minister Wedel*, the *Norvik*, and the *Empire Lytton*, HMS *Havelock* stood by the damaged tankers in the hope that the vessels, which were "floating well and not on fire," could be salvaged and also in the hope that the British destroyer might have a chance of attacking any U-boat which approached the tankers.[41]

At day light the crews of the *Norvik, Minister Wedel*, and *Empire Lytton* were ordered out of their life boats to board their ships to see if it were possible to salvage the tankers. It was found that the *Norvik* could not be salvaged while the *Minister Wedel* after some hour's of work could be saved and might be able to steam at a speed of two or three knots. After two hour's work the *Empire Lytton* was able to steam at six knots. At 0912 HMS *Havelock* received a radio signal from the Admiralty stating that there were estimated to be six or seven U-boats operating against TM 1. Upon receiving this signal the commander of the escort group decided to abandon the three damaged tankers after picking up their crews. Boyle's reasons for this decision were threefold. To concentrate all the escorts to give TM 1's remaining undamaged ships the best possible protection; to refuel HMS *Saxifrage* which was running low on fuel; and to permit Boyle to take personal command of the escorts protecting what was left of the convoy. Boyle ordered the engine rooms of the *Norvik* and *Minister Wedel* to be destroyed by gunfire which set the two tankers on fire. The *Empire Lytton*, because her cargo of aviation gasoline would be of no use to a U-boat, was just left abandoned and drifting when the British escort left to return to TM 1.[42] Within a half hour the *Empire Lytton* was sunk by the U-422, and the *Minister Wedel* and the *Norvik* were later sunk by torpedoes from the U-522.[43] With the sinking of the three damaged tankers by the U-422 and the U-522 there came about a degree of confusion among the Germans as to just how many ships had been sunk. This happened because the tankers had been attacked two times and with each attack the Germans thought a tanker had been sunk.[44]

At 1224 HMS *Godetia* obtained a "firm" sonar contact at a range of 1,800 yards. The British corvette increased her speed to 15 knots and prepared to attack with depth charges. At 1230 the air bubbles from a track of a torpedo was seen and almost at the same time the periscope of a U-boat was sighted. The torpedo did not hit any vessel. HMS *Godetia* attempted to ram the U-boat. In fact the U-boat's periscope passed down the starboard side of the British warship and a number of officers and ratings could actually see the hull of the U-boat under the surface of the water. As the periscope passed down the starboard side of the corvette HMS *Godetia* fired a pattern of eight depth charges. However, the U-boat, which was probably the U-134, was not sunk for afterwards the commander of HMS *Godetia* "estimated that the time of firing was about 5 seconds early. The submarine passed between the ship and the starboard throwers." Moreover, two depth charges in racks at the stern of the corvette were not dropped because the order to fire had not been heard. HMS *Godetia* did not regain contact with the U-boat even though she was joined in the search by HMS *Pimpernel*. At 1330 the two corvettes gave up the hunt for the U-boat and steamed away to rejoin TM 1.[45] Even though the U-134 was not sunk by

39. PRO, ADM/199/2016, Analysis of U-boat Operations. . . , p. 6; Rohwer, *op. cit.*, p. 145n.

40. PRO, ADM/199/2016, Analysis of U-boat Operations. . . , pp. 6-7.

41. PRO, ADM/199/719, Co *Havelock* to Director. . . , 14 Jan. 1943.

42. PRO, ADM/199/719, Co *Havelock* to Director. . . and Appendices A and I, 14 Jan. 1943.

43. Rohwer, *op. cit.*, pp. 145-146. At 1546 HMS *Havelock* not knowing the fate of the abandoned tankers radioed Gibraltar and West Africa the positions and state of the damaged of the tankers *Norvik, Minister Wedel*, and *Empire Lytton*. ADM/199/719, Co *Havelock* to Director. . . . and Appendix K, 14 Jan. 1943. HMS *Penstemon*, HMS *Samphire*, HMS Tug *Nimble* were dispatched to find the tankers and attempt to salvage them. The British ships did not find the tankers because they had been sunk by the Germans, but about fifty miles east of TM 1 the British ships encountered a U-boat which they attempted to engage. PRO, ADM/199/2016, Analysis of U-boat Operations. . . , pp. 10-11.

44. BdU War Diary, p. 17.

45. PRO, ADM/199/719, Co *Havelock* to Director . . . and Appendices G and H, 14 Jan. 1943.

HMS *Godetia* she was heavily damaged. "At the time many of those on board [the U-134] thought that the end had come, but the boat held and they survived."[46]

At 2216, the U-511 reported to the BdU that she had sunk the merchant ship *William Wilberforce*, a stern of TM 1, at 29° 15″ N, 26° 46″ W. The U-511 while attempting to join the *Delphin* group, as ordered by the BdU, came across the *William Wilberforce* by chance, astern of TM 1. The *William Wilberforce* was an independently routed merchant ship sailing without convoy from Lagos to Britain. For reasons which are not known the *William Wilberforce* was following a route which led the ship into the battle for TM 1. The U-511 fired two torpedos which hit the *William Wilberforce* and she sank in ten minutes. The survivors were later picked up by the Spanish ship *Monte Arnabal* and were landed at Tenerife.[47] The BdU knew that the *William Wilberforce* was not a member of TM 1, but nevertheless she is listed in its War Diary along with the losses from TM 1.[48] Allied naval intelligence appears to have only noted the U-511 radio transmission, but apparently did not know how the *William Wilberforce* managed to sail into the battle for TM 1.[49]

During the morning and afternoon of 10 January TM 1, now consisting of three tankers and four escorts, continued steaming towards Gibraltar. The convoy was not attacked during this period, but a number of U-boats remained in contact with TM 1.[50] the first German sighting report made on 10 January placed TM 1 at 29° 45″ N, 22° 14″ W or about two hundred forty miles north and west of the Canary Islands. At 1950, just before dark, the U-620 attempted an attack on TM 1, which "was strikingly silhouetted against the Western sky," and claimed to have made two hits with torpedoes on two tankers which were not observed by the Germans.[51] Most likely the explosions heard by the crew of the U-620 were her torpedoes exploding at the end of their run.

The U-522 torpedoed the tanker *British Dominion* whose cargo was aviation gasoline at 2330. The British tanker burst into violent flames, which brightly illuminated the area for a considerable distance all around. The crew abandoned the ship which did not sink and was later destroyed with gunfire by the U-620.[52] Immediately after the attack on the *British Dominion* TM 1's escorts conducted a *raspberry*. By the light from the burning *British Dominion* and star shells four U-boats were sighted by the British. HMS *Havelock* carried out a "deliberate" attack on one U-boat dropping 14 depth charges, but without result. HMS *Godetia* sighted at 2345 a periscope which was fired at by the ship's 20 mm guns without apparently doing any damage to the enemy. After completing the *raspberry* HMS *Godetia* was ordered to search for survivors from the *British Dominion*, but only 15 men were picked up before the British corvette was ordered to rejoin TM 1. HMS *Pimpernel* sighted a U-boat astern of the convoy and fired one round from her 4″ gun at the enemy vessel before it submerged and then the corvette conducted a sonar search which failed to locate the enemy craft before receiving at 2347 an order to rejoin the convoy. When the *British Dominion* was torpedoed HMS *Saxifrage* sighted a U-boat off the port bow of the burning tanker. HMS *Saxifrage* attempted to close with the U-boat, but when the enemy vessel dived the corvette began to conduct a *raspberry*. Upon seeing HMS *Godetia*'s 20 mm guns open fire, HMS *Saxifrage* steered towards the gunfire, sighted two U-boats who dived when "illuminated," and then conducted a sonar search of the area, but did not gain contact with a U-boat.[53] In the immediate aftermath of the torpedoing of the *British Dominion* the four escorts of TM 1 sighted each at least one U-boat, but not one of the British warships were able to mount a successful attack against the enemy. After the torpedoing of the *British Dominion* there were no more U-boat attacks on TM 1 and at daylight on 11 January only the U-511 and the U-522 remained in contact with the British convoy.[54]

On 11 January at 0904 the BdU radioed the U-511 and the U-522 that the "last two tankers must also fall . . . ."[55] But this was not going to happen because of the balance of power had radically shifted in favor of

46. PRO, ADM/223/16, pp. 15-16.

47. R.M. Coppock of the Ministry of Defense, London to Professor Jurgen Rohower, 17 March 1986. Professor Rohower sent Mr. Coppock's letter to the author.

48. BdU War Diary, p. 17.

49. PRO, DEFE/3/708, U-511 to BdU, intercepted 2216/9/1/43.

50. E.g., PRO, DEFE/3/708, U-620, U-571, U-522, to BdU, intercepted 1130, 1154, 1324, 1610, 1950/10/1/43.

51. PRO, ADM/223/16, p. 16

52. Rohwer, *op. cit.*, p. 146.

53. PRO, ADM/199/719, Co *Havelock* to Director. . . and appendices A,G,H and I, 14 Jan. 1943.

54. PRO, DEFE/3/708, BdU to U-511 and U-522, intercepted 1013/11/1/43.

55. PRO, DEFE/3/708, U-511 to BdU, intercepted 1013/11/1/43.

the British convoy. Only the U-511 and the U-522 remained in contact with TM 1 for the rest of the U-boats of the *Delphin* group had either fallen astern of the convoy or had broken off the operation because of the need to be refueled.[56] And just after daylight on 11 January a PBY Catalina aircraft reached TM 1 and was employed to search down the bearings made by HMS *Havelock*'s radar. Later in the day HMS *Pathfinder* and HMS *Penn* reinforced the escort of TM 1. On 14 January the two remaining tankers of TM 1, without incident, with a reinforced air and surface escort, arrived at Gibraltar.[57]

TM 1's voyage from Trinidad to Gibraltar was a disaster for the British and a victory for the Germans. The BdU thought that,

> the convoy escort, which consisted mainly of fairly old gun boats and Corvettes, was inexperienced and not very dogged. Despite excellent hydrophone and Asdic [sonar] conditions with very calm weather and sea, it did not succeed in badly damaging a single boat, let alone sinking one.[58]

The Germans claimed to have sunk fifteen tankers amounting to 141,000 tons. While in fact TM 1 lost seven out of nine tankers amounting to 56,453 tons and if the *William Wilberforce* is included the total British losses were eight ships totalling 61,457 tons. At the same time the escorts of TM 1 did not sink one U-boat. However, after the battle Allied naval intelligence came to the conclusion, based largely on *ultra* intercepts, that several U-boats had been badly damaged by counterattacks made by the escorts of TM 1.[59] However, the damage, sustained by the U-boats in no way offsets the loss of seven out of nine tankers in TM 1 plus the *William Wilberforce* to enemy action.

On 16 January the senior naval officer at Gibraltar ordered a Board of Inquiry to be assembled the next day to "hold a full and careful investigation into the circumstances attending the escort of Convoy TM 1 and the attacks thereon resulting in the loss of seven ships. . . ." This Board of Inquiry consisted of Captain W.E. Parry of HMS *Renown*, Captain R. G. Onslow of HMS *Ashanti*, and Lieutenant Commander R.W. Astice, the navigating officer of HMS *Renown*.[60]

The Board of Inquiry met on board HMS *Renown* for three days and studied a number of documents, such as HMS *Havelock*'s report of 14 January to the Director of the Antisubmarine Warfare Division in the Admiralty, and heard evidence from sixteen witnesses which included officers and men from TM 1's escort as well as crew members of the tankers belonging to the convoy. After hearing all the evidence and studying the relative documents the Board of Inquiry concluded that TM 1's escort was not strong enough to effectively deal with the U-boat attacks on the convoy. That the escort's camouflage was of the wrong type for the Central Atlantic. That the failure of the radar sets on HMS *Godetia* and HMS *Pimpernel* "materially reduced the protection afforded the convoy." And that there had been several breaches of security at Trinidad, such as, oil drums belonging to the deck cargoes of the tankers being marked "Gibraltar" and "Algiers" and the ships being loaded to their "Tropical marks was a sure indication . . . that the destination was certainly not the United Kingdom and was probably the Mediterranean or West African Ports." The Board of Inquiry then recommended, among other things, that increasing the strength of escorts of future TM convoys "merits very serious consideration." That the correct type of camouflage paint be used in the future for escorts protecting TM convoys. That there be improved maintenance of escort's radar sets. And the security at Trinidad should be improved.[61]

On 27 February the Naval Staff's Antisubmarine Warfare Division issued its "Analysis of U-boat operations in the vicinity of Convoy TM 1, 3rd-11th January 1943." This analysis is based on the reports of the proceedings and track charts of HMS *Havelock*, HMS *Pimpernel*, HMS *Godetia*, and HMS *Saxifrage* and the report of the Board of Inquiry held at Gibraltar. The Antisubmarine Warfare Division's analysis concluded that the defeat of the convoy's escorts was a result of a failure "to detect the U-boats in the initial stage of the attack and once the casualties started the number of the escorts was too small to enable effective offensive action to be taken." The reason for this failure was the breaking down of HMS *Godetia*'s and HMS *Pimpernel*'s radar sets as well as the failure of HMS *Havelock*'s HF/DF set which the British did not know about

56. BdU War Diary, p. 19.

57. PRO, ADM/199/2016, Analysis of U-boat Operations. . . , p. 11.

58. BdU War Diary, p. 20.

59. PRO, ADM/223/16, pp. 18-20.

60. PRO, ADM/199/719, Edward-Collins to W.G. Parry, 16 Jan. 1943.

61. PRO, ADM/199/719, Report and Minutes of a Board of Inquiry held on board HMS *Renown* on 17th, 18th, and 19th January 1943 to hold a full and careful Investigation into the Circumstances attending the Escort of Convoy TM 1, and the attacks thereon resulting in the loss of seven ships.

during the battle for TM 1. The equipment failures on the escorts prevented them from running down bearings made by radar and from attacking these vessels by means of offensive sweeps.[62]

Both the Board of Inquiry's report and the Antisubmarine Warfare Division's analysis miss the real reason for the defeat of the escorts by the U-boats during the battle for TM 1. The strength, tactics, and equipment failures of the escorts are minor compared to the intelligence failure caused by the inability to decode the BdU's order setting up the *Delphin* group patrol line in time for TM 1 to be routed around one of the flanks of this patrol line.[63] If this order had been quickly decoded there would most likely not have been a battle for TM 1 and the convoy would have arrived at Gibraltar with the loss of only one ship.

The failure to quickly decode the order from BdU setting up the *Delphin* group's patrol line would not in itself have led to the disaster of TM 1 if a few of the basic concepts of antisubmarine warfare were understood by the men who planned the route of the convoy. The route of TM 1 was approximately northeast from Trinidad to Gibraltar. The planners of this route could not have picked one which would be more conducive to U-boat operations even if they had attempted to do so for the greatest part of the voyage of TM 1 was without air cover. Just after TM 1 departed Trinidad an American aircraft forced a U-boat to submerge twenty miles astern of the convoy thus preventing the enemy vessel from gaining and maintaining contact with TM 1. Also the enemy attacks on TM 1 stopped as soon as the convoy received air support from Gibraltar. In the Admiralty the staff officer, who compiled the "Monthly Chronological History and Merchant Shipping Casualties" thought that the "fate" of TM 1 was "an index of the strength of a U-boat pack operating in favorable conditions (all attacks out of the range of shore based aircraft)."[64]

62. PRO, ADM/199/2016, Analysis of U-boat Operations. . .

63. PRO, DEFE/3/707, BdU to *Delphin* group, intercepted 1810/5/1/43, decoded 0517/9/1/43.

64. PRO, ADM/199/2085, f. 2.

Historically, even in the First World War, the mere appearance of an enemy aircraft has had an inhibiting effect on U-boats.[65] The planners of TM 1's route were working on the assumption that the shortest distance between two points, without taking into account the problems caused by lack of air support, is the best route with the objective of economically deploying, on paper, tanker tonnage. This principle might be true mathematically, but when routing convoys, which might be attacked by U-boats, a direct course between two points, without air support, is not always the safest one to follow. Perhaps, lacking air support between Trinidad and Gibraltar as they were, the safest way to get the ships of TM 1 to Gibraltar would have been for them to have sailed to the United States in the Interlocking Convoy System and then join a United States—Gibraltar convoy which were at the time suffering small losses.

It would take the bloody battles along the North Atlantic convoy routes during the winter and spring of 1943 to force Allied planners and strategists to see the need for continuous air cover for convoys throughout their passage as the only means to defeat the U-boats in the Battle of the Atlantic.[66]

65. PRO, ADM/199/2084, f. 525.

66. David Syrett and W.A.B. Douglas, "Die Wende in der Schlacht im Atlantik: SchlieBung des Gronland-Luftlochs," 1942-1943," *Marine-Rundschau*, (Jan.-Feb., March-April, May-June, 1986), vol. 83, pp. 2-11, 70-73, 147-149.

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Creating the U.S. Bureau of Aeronautics

Paolo E. Coletta

At the request of the General Board of the Navy, in 1919 Capt. Harry E. Yarnell investigated the potential for military conflict and concluded that Japan alone posed a viable threat to the United States. To meet that threat, the United States must provide a powerful fleet in the Western Pacific. The Army agreed, but the Joint Army and Navy Board, unimpressed with their performance in the Great War, denigrated the value of aircraft in fleet operations. As for the Navy, given the great cost of the battle fleet, it could not afford extensive research and development for what was deemed a new and unproved weapon system. The battleship therefore remained the prime index of naval power.[1]

Even if, following the Great War, the United States remained with Britain as one of the world's greatest naval powers, very heavy cuts in defense budgets were made during the last year of President Woodrow Wilson's administration and the Republicans ones of the 1920s. The naval budget for fiscal year (FY) 1919 was for $2,002,311,000. In FY1920 it dropped to $736,021,000, in FY1921 to $650,374,000, and in FY1922 to $476,775,000. Given but $20 million for aviation in FY1920, the Navy could acquire but a hundred aircraft, and in FY1921 naval aviation received less than $7 million. Instead of the 1,656 officer aviatiors and 45,632 enlisted men the Navy had on 11 November 1918, in 1919 there would be but fifty officers and seven thousand enlisted men. In the battle of the budget and that against the Army Air Service, naval leaders must have the qualities of diplomat and politician.

As yet, sailors failed to understand the particular problems of aviators and regarded them as strangers. Moreover, aviators, like the line officers they were, must be seamen and must have two years of sea duty in grade if they wished to be selected for promotion. Adverse to aviation, the Chief of Naval Operations (CNO), 1915-1919, ADM. William S. Benson, merely sent favorable reports about it by wartime commanders to the General Board "for consideration and recommendation." He opposed building aircraft carriers and wheeled aircraft to operate from them and the provision of aircraft to fly off battleship turrets and dismissed the subject by saying that "The Navy doesn't need airplanes. Aviation is just a lot of noise." The Director of Naval Avation (DNA) in his office in 1919, Capt. Thomas T. Craven, compared his own authority to that "of a weather cock on a New England barn."[2] On 1 August 1919 Benson plunged naval aviation to its nadir by making it merely a section of OPNAV's new Planning Division and leaving Captain Craven only his title. The result was that aviation would consist solely of seaplanes, which unlike carrier aircraft could not operate far at sea unless mothered by tenders.[3]

Among others, several wartime fleet commanders; RADM David W. Taylor, Chief of the Bureau of Construction and Repair (BuC&R); Secretary of the Navy Josephus Daniels (1913-1921); Captain Craven; and the General Board played a part in obtaining a Bureau of Aeronautics. Favorable reports about aircraft operations during the Great War were submitted by

1. Thomas H. Buckley and Edwin B. Strong, Jr., *Americal Foreign and National Security Policies, 1914-1945*. Knoxville: University of Tennessee Press, 1987, p. 97-100.

2. Paolo E. Coletta, *Patrick N.L. Bellinger and U.S. Naval Aviation*. Lanham, Md.: University Press of America, 1987, p. 125.

3. Capt. Thomas T. Craven to Rep. Daniel D. Oliver of the House Naval Affairs Committee, June 13, 1919. In "Naval Appropriation Bill," *Army and Navy Register* 65 (June 21, 1919):780, and Craven's testimony in ibid., p. 281; Mary Klachko with David F. Trask, *Admiral William Shepherd Benson: First Chief of Naval Operations*. Annapolis, Md.: Naval Institute press, 1987, p. 163; Isaac Don Levine, *Mitchell: Pioneer of Air Power*. New York: Duell, Sloan and Pearce, 1943, p. 183; Charles M. Melhorn, *Two-Block Fox: The Rise of the Aircraft Carrier 1911-1929*. Annapolis, Md.: Naval Institute Press, 1974, pp. 28-29; "Planning Navy Aviation Organization," *Army and Navy Journal* 57 (Mar. 20, 1920):885; "Naval Bureau of Aviation," *Army and Navy Register*, 67 (Mar. 13, 1920) p. 331; "[Daniels] Favors Navy Bureau of Aviation," ibid. 57 (May 20, 1920):1092.

Photograph taken outside wing #1, Navy Building, Spring of 1921, just prior to relief of Capt. T. T. Craven, Director of Naval Aviation, by Capt. Wm. A. Moffett. Personnel are those attending the usual weekly conference in D.N.A.'s office for purposes of co-ordinating aviation matters within the Department and comprise key people from D.N.A.'s staff; from Office of Naval Operations; and from the several involved Bureaus.

Front Row, l. to r.: E. D. Stanley, S&A; T. A. Turner, USMC, DNA; J. P. Norfleet, DNA; E. G. Allen, Budgets; V. K. Coman, Ops.; R. N. Griswold, Ops.; W. A. Moffett, DNA; T. T. Craven, DNA; W. P. Giles, DNA; K. Whiting, DNA; C. T. Jewell, Nav.Obs.; P. N. Bellinger, DNA; Z. Lansdowne, DNA. Back Row: Secretary; Secretary, Rachael Parham; Secretary, Mary Farrington; W. L. Richardson, (Photography); Secretary; J. J. McAfee, (Pigeons); ? , USMC, DNA; J. W. Rankin, BuOrd; Robt. Burg, BuNav; C. C. Tinker, Public Relations; S. M. Kraus, BuSE; B. G. Leighton, BuSE; J. C. Hunsaker, BuC&R; K. Bragg, BuY&D; G. C. Chevalier, DNA; R. E. Byrd, DNA; W. Capehart, DNA; ? ; G. Fulton, BuC&R; T. C. Gibbs, BuS&A; R. M. Hinckley, BuNav; Page, USMC, DNA; L. Lacey, Ch. Clerk, DNA; Secretary, Betty Baker; Miss G. Baker, secretary to D.N.A.; Secretary.

ADM. Henry T. Mayo, commanding the Atlantic Fleet, and ADM. William S. Sims, Commander, American Naval Forces in European Waters. Aviation had no geater friend than Admiral Taylor. The latter not only demanded a Bureau of Aeronautics but was willing to transfer his aviation people to one—and these comprised 50 percent of his personnel and 55 percent of the aviation personnel in the entire Navy Department.[4] Objectives he did not make public were to prevent the Army from "gobbling up naval aviation" and to have naval constructors preeminent in two bureaus rather than in one only.[5]

In January 1919 Craven called to Washington all naval aviators on the East Coast to discuss the future of their profession. These aviators wished to see naval aviation developed as part of the blue water fleet but had no organization through which they could influence the making of naval aviation policy. Some 60 percent of them originally favored a Naval Aviation Corps similar to the Marine Corps, then changed their minds and favored a bureau. Craven himself waffled: he had fought with especially the Bureau of Navigation, which overlapped his own training and personnel functions, but he lacked authority to overrule it. While he would hold some individual responsible for aviation, he opposed a bureau. Perhaps an advisory council comprised of bureau representatives would improve matters.[6]

Opposed to demands of Brig. Gen. William "Billy" Mitchell, USA, beginning with the end of the Great War, that all military and civil aviation be unified, Secretary Daniels would improve the status of naval aviation by creating a Bureau of Aeronautics to which he would directly provide funds and which would control its personnel detail. He also believed that such a bureau should foster cooperation with the other bureaus. To his aid came Rep. Frederick C. Hicks, of New York, with a bill calling for both a Bureau of Aeronautics and a Naval Aviation Corps, the latter limited to six hundred officers and six thousand men. Stimulated to do so by the Navy's seaplane transatlantic flight of May 1919, the crossing of the Atlantic by

4. Jerome C. Hunsaker to Chief, Bureau of Aeronautics, "Historical Papers Submitted," 11 vols, Vol. 9, p. 3. "Formation of the Bureau of Aeronautics of the Navy Department." Washington: National Archives Record Group 72, Entry 12A, Box 5.

5. Taylor to Comdr. Emory S. Land (CC), May 14, 1920, Emory S. Land Papers. Washington: Library of Congress, Manuscript Division.

6. Hunsaker, "Historical Papers Submitted," 11:5; Richard E. Byrd, *Skyward*. New York: G.P. Putnam's Sons, 1928, pp. 101-2; LCdr. William D. Shanahan, USNR. *Procurement of Naval Aircraft 1907-1939*. Vol. 17 of Deputy Chief of Naval Operations (Air). Monographs in the History of Naval Aviation. Washington: Naval History Division, 1946, pp. 255-58.

Rear Admiral William Adger Moffett, USN.

Capt. Thomas T. Craven, USN, Director of Naval Aviation, 1919-1921, known as "Tireless Tom" or "Turn To." Courtesy U.S. Naval Institute.

the British airship R-34, the proved worth in exercises of flying boats for spotting and bombing, the provision of the Navy's first genuine fighter, the Vought VE-7, and of torpedo bombers, the General Board requested "great experimental development immediately for both Heavier-than Air and Lighter than-Air." The board lacked senior members with aviation experience yet had to decide upon the characteristics of aircraft. Believing that an air bureau could do so without competing with it or hindering its own labors, the board quietly supported the creation of one.[7] Noting that aircraft would add 25 percent to the power of a fleet and that carriers would provide power in the Western Pacific, where the Philippines were hostage to Japan, the board recommended, among other ships, that six aircraft carriers, the same number the British had, and two rigid airships be built.[8] Congress approved only converting a collier into the small experimental aircraft carrier, the *Langley*.

Great sighs of relief went up in the aviation community when Benson retired because of age on 15 September 1919. As his successor Daniels chose Robert E. Coontz, who took office for a four-year term on 1 November 1919. Shortly thereafter, on 20 February 1920, Admiral Taylor spoke with Secretary Daniels and got him to agree that a "Memorandum of Points" be submitted to an advisory council of bureau representatives. The points included: 1) opposition to an in-

7. Thomas C. Hone, "Naval Air Leadership: Rear Admiral William A. Moffett as Chief of the Bureau of Aeronautics." In *Air Leadership: Proceedings of a Conference at Bolling Air Base, April 13-14, 1984*. Washington: Office of Air Force History, USAF, 1986, p. 92.

8. "Report of the General Board of the Navy." In *Annual Report of the Secretary of the Navy, 1920*. Washington: GPO, 1920, Appendix A; "Aircraft versus Battleships," *Army and Navy Register* 67 (Mar. 3, 1920):299, and "Hearings of the General Board," ibid. 67 (June 13, 1920):287-89.

dependent air force; 2) civil aviation should be directed by the Department of Commerce; 3) the Army and Navy should be segregated and naval aviation should be put under the control and direction of a corps formed by a temporary detail from all branches of the Navy. The council now met with Coontz, who would draft the legislation. Coontz found most of the bureau chiefs and staff officers "strongly entrenched" and opposed to creating a Bureau of Aeronautics, and that only he favored a Naval Aviation Corps. However, he felt that "aviation had grown to be too important for the small amount of consideration which it was receiving in the Department, and that a strong and experienced man was needed to develop it to its proper sphere in the Navy."[9] Moreover, he believed that neither he nor anyone else could properly handle naval aviation as matter stood. While he searched for a good man to head a new aeronautic bureau, he called in the chief of the Bureau of Engineering and Taylor and with them overrode the council, used Taylor's memorandum to draft legislation for a corps and a bureau, and sent a copy to Representative Hicks.[10]

Most bureau chiefs objected to demands for a naval aviation bureau or corps. To them, aviation was but a part of a ship's fighting equipment, and aviators were no different from other line officers. Moreover, they could see no place in the Navy for superannuated flyers and wondered how "aviation duty only" officers would be evaluated for promotion with other line officers.[11]

The member of the House Naval Affairs Committee best informed about naval aviation, Hicks, prepared a bill, sent it to Taylor for comment, revised it, and forwarded it on 16 April 1920 to Secretary Daniels. Daniels approved it, but at hearings held on the bill on 29 April most bureau heads opposed either a corps or bureau or both, and the bill died.

On 20 November 1920 Coontz chose Capt. William A. Moffett to be the New DNA. He ordered Moffett detached from his battleship, the *Mississippi,* and on 9 December directed him to "proceed home and await

RADM Bradley A. Fiske was instrumental in establishing the Office of Director of Naval Aviation and like William F. Fullam and William S. Sims supported the creation of a Naval Bureau of Aeronautics.

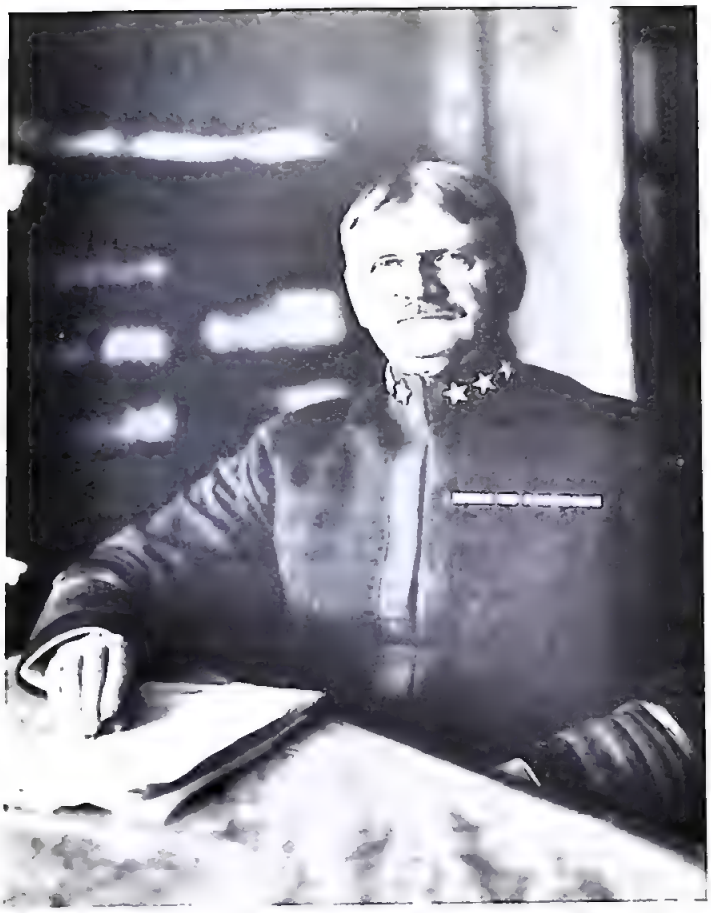
orders." In January 1921 he assigned him to his own office as the DNA starting 7 March 1921.

Why did Coontz choose Moffett to head naval aviation? While commanding the cruiser *Chester* during the Tampico, Mexico, incident of 1914, Moffett had seen Patrick N.L. Bellinger, Naval Aviator No. 8, fly reconnaissance missions over Veracruz that greatly helped Army and Navy operations, and his own excellent gunnery had obtained him the award of a Medal of Honor. While commanding the Ninth, Tenth, and Eleventh Naval Districts and also the Naval Training Station, Great Lakes, Illinois, during the Great War, he had established an aviation unit and trained aviation personnel for wartime service. For that duty he had been awarded a Distinguished Service Medal. Coontz also knew that Moffett had called at the bureaus involved with aviation and at various divisions in his own office late in 1919 to obtain information about the

9. Robert E. Coontz, *From the Mississippi to the Sea.* Philadelphia: Dorrance, 1930, pp. 408-9.

10. Hunsaker, "Historical Papers Submitted," 11:5: Lawrence H. Douglas, "Robert Edward Coontz, 1 November 1919-21 July 1923." In Robert William Love, Jr., ed. *The Chiefs of Naval Operations.* Annapolis, Md.: Naval Institute Press, 1980, p. 31; Archibald D. Turnbull and Clifford L. Lord, *History of United States Naval Aviation,* 1949; rept. Arno Press, 1972, p. 189.

11. Hunsaker, "Historical Papers Submitted," 11:3.



With RADM David D. Taylor, Chief of BUC&R, ADM Robert E. Coontz, the Chief of Naval Operations, 1919-1923, overruled opposing chiefs of bureaus and supported a Naval Bureau of Aeronautics. Courtesy U.S. Naval Institute.

catapults on his ship. After he had been given the runaround, he had determined to tell Congress that it should reform naval organization and adiministration by establishing a Bureau of Aeronautics with himself as its chief. Moreover, various pioneer aviators had begged him to seek the billet of chief of a Bureau of Aeronautics they predicted would soon be created. Moffett was in the zone for promotion to flag rank and had a reputaion for being a smooth negotiator and expert in public relations.[12]

When Moffett arrived in Washington he found that Comdr. Jerome C. Hunsaker (CC), had provided Admiral Taylor "a rough draft of necessary legislation to create an Aeronautic Corps in the Navy and a Bureau of Aeronautics" and that Representative Hicks had changed his bill so that it called only for a bureau. The issue, however, was complicated by the fact that with the change in administration following the Republican landslide of 1920 efforts might resume to obtain an independent air force. Among those who supported a bureau were the retired rear admirals Bradley A. Fiske and William F. Fullam and the still active William S. Sims. As Fiske told Sims, the next session of Congress would be busy. "As to the Navy, the two main questions must be aeronautics and organization. Let's get a Bureau of Aeronautics p.d.q.—as p.d.q. as possible. . . . If we don't get the Bureau next session, General Mitchell and a whole horde of politicians will get an 'Air Ministry' established and the U.S. Navy will find itself lying in the street, and the procession marching over it." Fiske then warned the prospective new Secretary of the Navy, Edwin Denby, and Sen. Henry Cabot Lodge, a "Big Navy" man, to be on their guard "in order to prevent the army from relegating us to the status of the Coast Survey."[13]

Often citing the poor performance of the independent British air force, most naval officers who testified before Congress favored a seperate Bureau of Aeronautics. So did the Assistant Secretary of the Navy, F.D. Roosevelt.[14] On 2 February 1921, the House Appropriations Committee favorably reported a bill creating a separate air bureau. Among those who supported the bill was Moffett.

Except for the addition during the Civil War of two new bureaus to those established in 1842, the bureau system in the Navy Department had remained unchanged. As yet, no CNO, fleet commander, or bureau chief was an aviator, and arguments among the last could be settled only by the Secretary of the Navy. Although the CNO was responsible for naval operations, he could not legally give an order to a bureau, and the General Board was denied the right to correspond directly with one. To cope with aviation, the bureaus treated aviation as they did ships. The Bureau of Navigation handled personnel, navigation instruments, operations, and training; the Bureau of Ordnance, aircraft weapons; the Bureau of Engineering, engines, generators, radios, and lighting equipment; and BuC&R, fuselages, hangars, and launching

12. Eugene E. Wilson, *Slipstream: The Autobiography of an Aircraftsman*. New York: Whittlesey House, 1950, 1965, pp. 5-6.

13. Sims to Fiske, Nov. 4, 1920, Fiske, Nov. 6, 1920, Mar. 15, 1921, William S. Sims Papers. Washington: Library of Congress, Manuscript Division.

14. "Mr. Roosevelt Against Air Service, Merger," *Army and Navy Register* 66 (July 5, 1919):5.

equipment. The Bureau of Supplies and Accounts made contracts and authorized purchases. The Navy therefore lacked a logical naval aviation organization and administration. Further, except for the National Advisory Committee for Aviation established in 1915, which concentrated upon aviation engineering research, a small experimental division at NAS Norfolk, and a similar one at the Naval Air Factory at Philadelphia, little was being done about the scientific study of aviation.

Several immediate postwar events helped Moffett and naval aviation. Although various naval aviators, particularly Capt. Henry C. Mustin and Comdr. Kenneth Whiting, had long called for the building of aircraft carriers, on 23 May 1919 Craven outlined for the Secretary of the Navy the first known program for a power projection naval air force, one that Moffett would largely follow. To make air power mobile, Craven requested an appropriation of $45 million with which to place aircraft and aviators on battleships and other ships as well, convert a ship into an experimental aircraft carrier and two others into aircraft tenders, acquire new high speed aircraft carriers and rigid airships, and have ships and planes carry out planned exercises. In addition he called for a number of HTA and LTA stations and for aviation training to continue at Pensacola and at aviation mechanics schools. To flesh out Academy graduates, he would establish a Naval Air Reserve. He realized that the scattering of aviation matters about the Navy Department and the bureaus gave ammunition to those seeking an independent air force, but rather than a Bureau of Aeronautics he recommended the adoption "of an actively progressive policy" for naval aviation.[15] By the time he left for sea duty in the spring of 1921, the most important of his requests for construction Congress had fulfilled were those for an experimental carrier and for several airships.

Craven so opposed a united air service that he would not speak to Mitchell, who demanded such a service and also a department of defense in newspapers and magazines and at Congressional hearings.[16]

Richard Evelyn Byrd. Courtesy of the U.S. Naval Institute.

Moffett took the same tack in his first appearance before Congress, on 25 April 1921, but unlike Craven he offered a positive policy with respect to aviation organization. Naval aviation problems were caused, he said, by the lack of centralized authority and great loss of time in obtaining what was needed by his having to go through bureau channels or the CNO. "The other bureaus to whom we must apply for work in connection with our engines, planes, etc., have a great deal of other work to do, and if they do not have as much interest in our work as they have in other work, we may be greatly delayed." A Bureau of Aeronautics, he stated, would eliminate delay. Further, "The interest of economy demands that chaotic conditions now obtaining be systematized."[17] Coontz, who followed,

15. Director of Naval Aviation to Secretary of the Navy, May 23, 1919. In Capt. Thomas T. Craven Papers. Washington: Naval Aviation History Office.

16. Capt. Thomas T. Craven, "Naval Aviation and a United Air Service," U.S. Naval Institute *Proceedings* 47 (Mar. 1921):307-12; "Naval Aviation," *Army and Navy Journal* 58 (Dec. 25, 1920):481; "Aviation Hearings," *Army and Navy Register* 69 (Jan. 22, 1921):73-74.

17. "Hearings before the Committee on Naval Affairs, House of Representatives, April 25, 1921." In *Sundry Legislation Affecting*

William "Billy" Mitchell shown at his court-martial in 1925. National Archives Photograph, Courtesy U.S. Naval Institute.

supported him.[18] Given the need for economy and the imminent holding of a naval disarmament conference, the House opposed any new construction. However, the naval appropriation bill for FY1922 provided seed money to start converting two battle cruiser hulls of the 1916 building program into aircraft carriers and called for the establishment of a Bureau of Aeronautics. Included in this measure was Sen. William E. Borah's call for a naval disarmament conference.[19]

With aviation of interest to agencies outside of as well as to the military services, the Harding administration on 31 March 1921 called into conference representatives from the War, Navy, and Post Office departments and the Army Air Service. Whiting, representing Moffett, and W.S. Stratton, head of the Bureau of Standards, served as advisers. The result was a request by President Harding, who opposed a separate air force, that the president of the National Advisory Committee on Aeronautics form a subcommittee from all government departments concerned and report on how these could cooperate and also recommend legislation for the federal regulation of air navigation and routes. The subcommittee's report favored federal regulation of airlines and government subvention to improve research on aviation materials and aircraft characteristics. Further, the military services should order aircraft in such a way that the aircraft industry could expand in time of emergency. Last, a naval bureau of aeronautics should be created. Harding's request that the report be translated into legislation was suported among others by Secretary of the Navy Denby, key representatives of both Congressional naval affairs committees, and Coontz. The appropriate bill was introduced by Representative Hicks, and Moffett was often mentioned as its first chief if a naval Bureau of Aeronautics were created. However, that part of the bill creating an air bureau in the Department of Commerce was referred to and languished in the Committee on Interstate and Foreign Commerce.[20]

A main reason Coontz had brought Moffett to Washington was to oppose Mitchell. With the ruthless pertinacity of a zealot, Mitchell loudly demanded the creation of a single air force run by aviators. Because naval aircraft were designed for missions different from those of the Army Air Service, Moffett countered that he sought to deny naval aviation the special organization, administration, training, and operations it must have in order to perform its missions and the research and development programs needed to improve it.

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the Naval Establishment, 1921-1922, 67th Cong., 1st Sess. Washington: GPO, 1921, pp. 88-89, "Navy Bureau of Aeronautics, Hearings," *Army and Navy Journal* 58 (Apr. 30, 1921):959.

18. "Fleet Element Hearings," *Army and Navy Jornal* 58 (Feb. 12, 1921):67.

19. "Hearings befor the Committee on Naval Affairs, House of Representatives." In *Sundry Legislation . . . 1920-1921*; Sims to Fiske, Jan. 6, 10, Mar. 12, 1921; Fiske to Sims, Jan. 12, 1921, Fullam to Sims, Feb. 18, 1921, Sims Papers; "In Congress: House Committee Hearings," *Army and Navy Register* 69 (Feb. 12, 1921):147-48; "Naval Aviation Neglected," ibid. 69 (Feb. 19, 1921):167, and "Naval Aviation Fares Well," ibid., 69 (Feb. 26, 1921):196; "Admiral Fullam Addresses [Senate Naval Affairs] Committee," ibid. 69 (Feb. 26, 1921):204; "Naval Aviation and a United Air Service," U.S. Naval Institute *Proceedings* 47 (Apr. 1921):561-67. As a member of the General Board in 1910, Fiske strongly recommended the rapid development of both heavier-than-air and lighter-than-air power, In 1912, he patented a torpedo plane. While Aide for Operations to the CNO, in January 1914 he won approval to create an Office of Aeronautics and to have Comdr. Mark L. Bristol assigned as the first Director of Naval Aviation. He thus began naval aviation administration. He and Sims were also strong supporters of Fullam, who in a "Quarterdeck" column in a leading New York City newspaper championed the creation of a "Three Plane Navy"—one able to operate above, on and below the sea. Paolo E. Coletta, *Admiral Bradley A. Fiske and the American Navy*. Lawrence: The Regents Press of Kansas, 1979, pp. 109-10; Elting E. Morison, *Admiral Sims and the Modern American Navy*. Boston: Houghton Mifflin, 1942, pp. 502-10.

20. Hunsaker, "Historical Papers Submitted," 9:5; "Cooperation in Aviation Activities," *Army and Navy Register* 69 (Apr. 16, 1921):354; "President Harding on Aviation," ibid. 69 (Apr. 16, 1921):378; and "No Combined Air Service," ibid. 69 (Apr. 16, 1921):379; "Aeronautics Committee Report," *Army and Navy Journal* 158 (Apr. 23, 1921): 935.

Mitchell also disliked the policies then governing Army and Navy air: while naval air ashore and afloat could use coastal stations for escort of convoy, spotting, and offensive operations against enemy forces and bases, the Army was relegated to coast defense. Last, he made sensational charges against the entire Navy, not just naval avation, and named names, including Moffett's. He thus obtained headlines and the initiative, but he failed to correct a number of errors and allegations, such as that air power made armies and navies useless at war.[21]

Fortunately for the Navy, "For every member of Congress in favor of air unification there stood a general opposed."[22] The Chief of the Army Air Service wanted Army air to remain under Army control, and President Harding demanded Army-Navy cooperation rather than separation. Moffett's tack, as he told Coontz, was that Mitchell countered presidential policy while the Navy loyally supported it.[23]

Moffett's reply to Mitchell was to demand that aviation go to sea on the back of the fleet as soon as possible and that more aircraft carriers be built.[24] But how should aviation be organized so that it could be integrated with the fleet? Should its status within the Department merely be improved? Should it have separate status *within* the Department? Should it have a separate organization outside of it? Should there be a Naval Aviation Corps or a Bureau of Aeronautics? If a bureau was established, should it design and manufacture aircraft, or, as had been the case to date, leave the matter to civilian manufacturers? Should the Bureau of Yards and Docks continue to build, repair, and maintain aviation facilities or should a new bureau engage civil engineers to do so? Would the new bureau or extant ones administer the naval experiment station at Annapolis and aerial experiment division at NAS Norfolk, the Naval Air Factory at Philadelphia, the LTA station at Lakehurst, New Jersey, and the Naval Aviation Training Center at Pensacola? Would the Bureau of Engineering continue to obtain aircraft engines or would the new bureau do so? Who would be responsible for obtaining spare parts? On these and other points Moffett preferred a flexible organization and refused at the time to put anything about them in writing. However he persistently repeated his arguments in favor of an air bureau. First, lacking executive authority as the DNA, he had to ask the CNO to approve his every move. Second, much time was lost in obtaining the cooperation of bureaus busy with their own work. Third, a Bureau of Aeronautics promised economy in expenditures. Could he have his way, he would have his own personnel design aviation equipment and draft specifications for it; the other bureaus would do the actual constructing or obtain the equipment from private sources. He also wanted some control over personnel rather than have merely a material bureau. Last, while he objected to a Naval Air Corps, he opposed the creation of a bureau that lacked authority to fulfill its responsibilities.[25]

Backed by Taylor, Coontz concluded that "A Bureau of Aeronautics should be formed for the good of the service."[26] Meanwhile Richard E. Byrd and several other naval aviators had written a bill creating a Bureau of Aeronautics. Rather than immediately going to Congress, where Hicks's bill still pended, he sought approval for it from the leaders of the Navy Department. He was supported among others by Daniels, Taylor, Franklin Roosevelt, even Benson. Byrd then lobbied and won the support of both Congressional naval committees. But to get the bill voted upon was another matter. The objective was obtained through the trick of adding it as an amendment to the naval appropriation bill. On 12 July 1921 the bureau was approved and given spaces in the Main Navy Building on Constitution Avenue. At the same time various persons asked Harding and other administration officials to name Moffett to head it.[27] Moffett was also favored by the influential *Army and Navy Journal*, which said that he would "continue his work which has shown efficiency and accomplishment since

21. Burke Davis, *The Billy Mitchell Affair*. New York: Random House, 1967, pp. 6-7, 53; Alfred F. Hurley, *Billy Mitchell: Crusader for Air Power*, 1964; rept. Indiana University Press, 1975, pp. 49-50; Levine, *Mitchell*, p. 201; Melhorn, *Two-Block Fox*, pp. 39-44; Turnbull and Lord, *History of United States Naval Aviation*, pp. 177, 180-1.

22. Melhorn, *Two-Block Fox*, p. 45.

23. William A. Moffett, Momorandum to the Chief of Naval Operations, "Publicity of General Mitchell Running Contrary to the President's Policy." William A. Moffett Papers, Special Collections, Nimitz Library, U.S. Naval Academy.

24. "Interview with Admiral Moffett," n.d., ibid; *New York Times*, July 22, 1921, p. 12.

25. Shanahan, *Procurement of Naval Aircraft*, pp. 270, 273-74, 276-80.

26. Coontz, *From the Mississippi to the Sea*, pp. 408-9.

27. Thomas S. Butler [Chairman of the House Naval Affairs Committee] to the President, July 16, 1921. Copy in Moffett Papers.

he became the Director of Naval Aviation in the Office of the Chief of Naval Operations."[28]

Convinced to do so by men opposed to Moffett, on 23 May 1921 Sen. Robert M. La Follette, of Wisconsin, had offered an amendment to the naval appropriation bill that required its chief to be appointed from "among the flying officers of the Navy or Marine Corps." Moreover, all officers appointed to the bureau must qualify as pilot or observer within a year. Although adopted as law, the general feeling was that with the aviation pioneers still too junior, the new bureau chief must be a man of great administrative experience. The finger pointed to Moffett, who, if nominated, must at fifty-two years of age qualify as pilot or observer.[29]

Promoted to rear admiral, the first air admiral in the U.S. Navy, Moffett became the Chief of the Bureau of Aeronautics on 25 July for a four-year term. His organization charter for the bureau was approved by Secretary Denby, and General Order No. 65 spelled out his duties. These comprised "all that related to designing, fitting out, and preparing Naval and Marine Corps aircraft."He would thus control the activities of the Naval Aircraft Factory, naval experiment stations, and helium production. He must also furnish "information covering all aeronautic planning, operations, and administration that may be called for by the Chief of Naval Operations." He thus became the latter's chief aviation adviser. Through the Bureau of Supplies and Accounts he could purchase either by advertising bids and awarding contracts to the lowest bidder or through a "proprietary" method in which he specified that only a particular supplier could provide an article. Construction work and the design, type, and installation of equipment performed by the other bureaus now had to satisfy him. He also gained the inspection function and could recommend the detailing of aviation personnel to the Bureau of Navigation.

28. "New Bureau of Aeronautics," *Army and Navy Journal* 58 (July 2, 1921):118. As is well known, rules which Moffett helped to write for aerial tests on domestic and former German warships were agreed to by Mitchell. By violating the rules, Mitchell on 21 July 1921 sank the undefended battleship *Ostfriesland*. Her sinking, of tremendous interest to the public, showed that ships lacking air defense would be destroyed by bombs. Therefore aircraft must be provided to defend ships and aviators must be freed from performing deck duty on ships so that they could follow a professional aviation career. Note that the sinking of the *Ostfriesland* had nothing to do with the creation of the Bureau of Aeronautics because she was sunk nine days after it had been established.

29. "Flying Officer for Chief of Bureau," ibid. 59 (May 28, 1921):1053.

Moffett's appointment pleased not only the naval aviation community but private aircraft manufacturers as well because he favored the development of commercial aviation and except for seeing classified matters would let their representatives roam about his offices.[30] The feeling of many others in the Navy were well expressed by RADM. Samuel McGowan, the fellow South Carolinian who had headed the Bureau of Supplies and Accounts during the Great War and was relieved of that duty at his own request at the end of 1920. "Once in a while they do the right thing—even in Washington," he wrote Moffett. "I am talking about your being the Air Chief." No writing about him, McGowan added, could do Moffett justice "because there's a great big human side to you that they don't know and couldn't fitly put into words if they did. But I know and our other close friends know. And that's why we on the inside feel cause to congratulate the *Navy* and the *Country* on your appointment."[31] To the British naval historian Stephen Roskill, "no other single step was to provide as fulfilling for the United States Navy, and have such far-reaching effects, as this appointment."[32] In his account of the creation of the Bureau of Aeronautics, RADM. Julius A. Furer stated that "the comparative newcomer to the Bureau system . . . demonstrated as did no other previous organizational experience of the Navy Department the flexibility and adaptability of the system in changing conditions; a characteristic that proved so valuable to the efficient administration of the Navy Department [during World War II]."[33]

30. W.B. Lebherz, General Manager, Gallaudet Aircraft Co., to Moffett, July 22, 1921. Copy in Moffett Papers; Shanahan, *Procurement of Naval Aircraft*, p. 308.

31. McGowan to Moffett, July 24, 1921, Moffett Papers.

32. Stephen Roskill, *Naval Policy Between the Wars: The Period of Antagonism, 1919-1929*. New York: Walker and Co., 1968, pp. 249-50.

33. RADM. Julius Augustus Furer, USN (Ret.), *Administration of the Navy Department in World War II*. Washington: Naval History Division, 1959, p. 352.

A frequent contributor to American Neptune, *in addition to other works Dr. Coletta has published biographies of Admirals Bradley A. Fiske, French Ensor Chadwick, Bowman Hendry McCalla, and Patrick N.L. Bellinger. He is currently working on a biography of William A. Moffett.*

Roux Painting Mystery Solved!

EVAN RANDOLPH

DEEP mystery surrounds the USS *Constellation*. Evan Randolph, a descendant of the ship's first captain, commodore Thomas Truxtun, has endeavored to unravel the confusion concerning *Constellation*'s various changes in form since her launch in 1797 until the present day. His article on the subject, entitled USS *Constellation, 1979 to 1979* appeared in the American Neptune October 1979 issue. Randolph's research strikes a middle road between the opinions of the Constellation Restoration Committee and the views expressed by Howard Chapelle.

In the process of completing this article, Randolph discovered a highly evidential painting of a frigate he believes to be *Constellation*, painted by Antoine Roux circa 1805. This painting which the author maintains shows *Constellation* as originally constructed, hangs in none other than the Peabody Museum of Salem! Mysteriously, this painting was labeled USS *Boston*, even though the scene shows a frigate with 28 gun ports on the gun deck, not 24 as was the case with USS *Boston*.

The author believes Antoine Roux painted USS *Constellation* entering a French port circa 1805. The evidence to support this claim is:

1) There were three American frigates circa 1805 with 28 gun ports on the gun deck. These were:

Constellation
Congress
Chesapeake

Of the three, *Constellation* was the only one that matches the Roux painting with six gun ports on the forecastle and 12 gun ports on the quarterdeck. *Congress* and *Chesapeake* had other configurations,[1] and are thereby eliminated.

2) Of the three American frigates, only one, *Constellation*, had a three part masting system.

Measurements establish that *Congress* definitely had a four part masting system and suggest that *Chesapeake* had a similar system. In the source cited, the latter frigate's royal mast measurements are missing, but the topgallant mast is approximately the length of *Congress*, as opposed to the substantially longer topgallant mast of the *Constellation*.[2]

This evidence definitely eliminates *Congress*, probably eliminates *Chesapeake*, and confirms *Constellation*, as Roux depicts a frigate with a three part masting system.

3) Small gunboats were used in the Mediterranean during the years 1804-1806.[3]

Both *Constellation* and *Congress* were in the Mediterranean 1804-1805.[4]

Chesapeake was not involved; she was "in ordinary" at the Washington Navy Yard 1803-1806.[5] this again eliminates *Chesapeake*.

The author believes that the gunboat shown by Roux following the frigate is the 10 gun sloop *Hornet*.

Purchased at Malta in the winter of 1804-1805, the *Hornet* remained in the Mediterranean until 1806 when she came to America and was sold.[6]

According to J. Fenimore Cooper in his book *History of the Navy*, the *Constellation* 38 arrived in the Mediterranean in September 1804.[7] Cooper describes how the Americans purchased two small vessels at that time, one of which was from Malta. This vessel "was converted into a sloop, armed and manned, and put under the command of Lieutenant Evans. She was

1. Detailed measurements of various ships, Peabody Museum, Fox papers, Josiah Fox 1808, item 773.

2. *Naval Documents Related to the United States Wars with the Barbary Powers*, vol. VII, pages 69, 70.

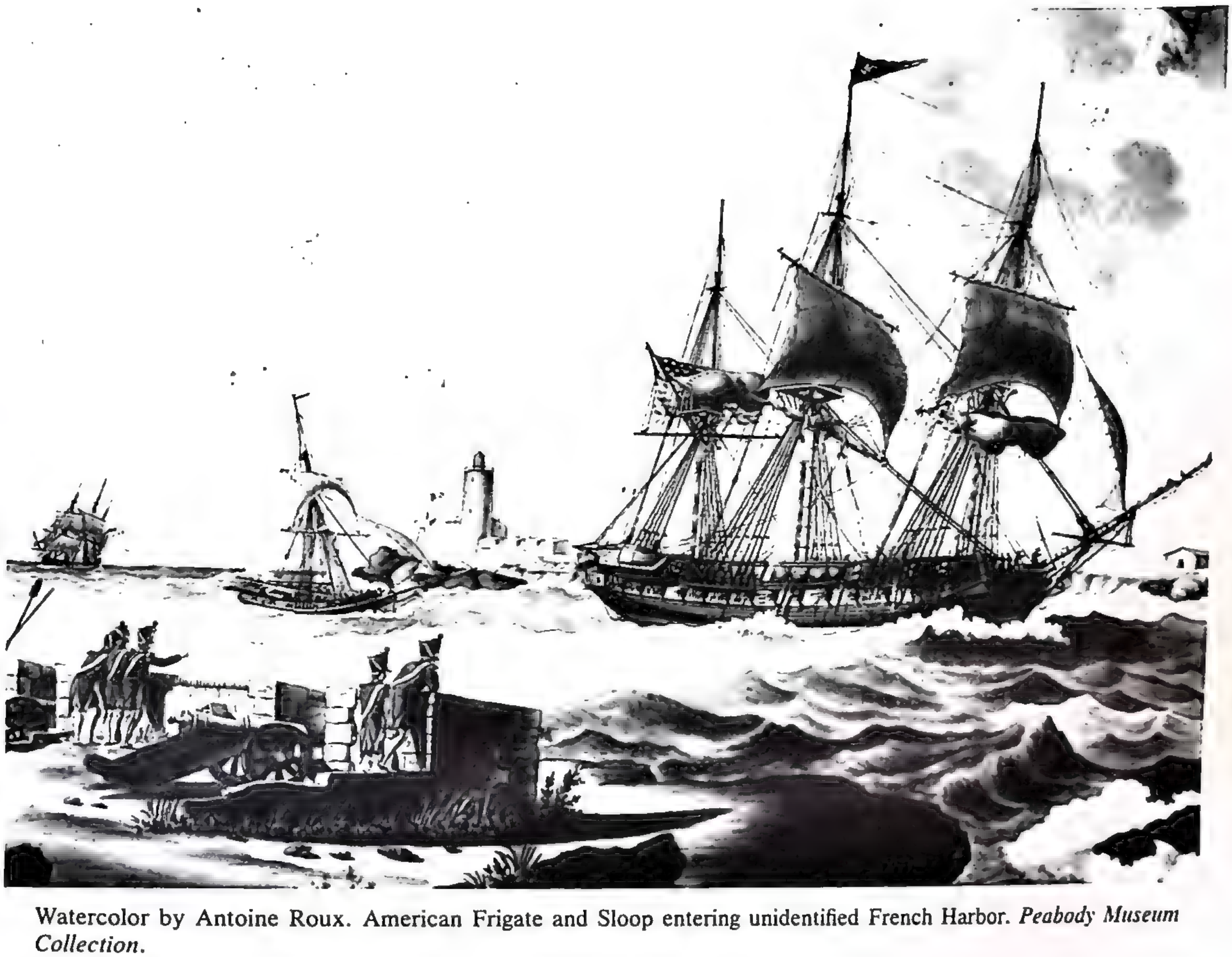
3. *The History of the America Sailing Navy*, Howard I. Chapelle, pages 192-208.
Naval Documents, Barbary Wars, vol. VII, pages 81-85.

4. *Naval Documents, Barbary Wars*, vol. VII, pages 69, 70.

5. *Ibid*, page 69.

6. *Op. Cit., The History of the American Sailing Navy*, page 217.

7. *History of the Navy of the United States of America*, J. Fenimore Cooper, vol. I, page 260.



Watercolor by Antoine Roux. American Frigate and Sloop entering unidentified French Harbor. *Peabody Museum Collection.*

called the *Hornet.*"[8]

The *Hornet* 10, according to Cooper, took part in the assault of Derne on 27 April 1805.[9]

Constellation, according to Naval records, evacuated a contingent of marines from Derne in June of 1805.[10]

Hornet 10 and *Constellation* 38 were therefore in the Derne area together during the spring of 1805.

4) All three frigates were to receive figureheads carved by Benjamin Rush. Two had upraised right arms (*Constellation* and *Congress*); *Chesapeake* had a figurehead with an upraised left arm.[11] The Roux painting shows a figurehead with an upraised right arm, again eliminating *Chesapeake* and confirming *Constellation*.

Conclusion

The mystery of the unidentified American frigate is finally solved. The evidence presented in this article supports the conclusion that Antoine Roux painted the USS *Constellation* 38, followed by USS *Hornet* 10, entering a French port circa 1805.

8. *Ibid*, pages 261, 262.

9. *Ibid*, page 263.

10. *Dictionary of American Fighting Ships, U.S. Naval Institute*, page 171.

11. *Pennsylvania Magazine of History and Biography*, XXXI, 1907, pages 239-240.

The American Neptune, VII, October 1947, pages 255-260.

Evan Randolph and his wife Penny live in Manchester, MA. He is Vice President of marketing for Papa Gino's of America, Inc. He is the father of three daughters.

Mr. Randolph is chairman of The Descendants of Commodore Truxtun. He wrote the article "USS Constellation, 1797 to 1979" which appeared in The American Neptune vol. XXXIX no. 4, 1979. Additional research on *Constellation* is planned.

Book Reviews

LUCIEN BASCH, *Le Musée imaginaire de la marine antique* (Athens: Institut Hellénique pour la Préservation de la Tradition Nautique, 1987). 8½″ × 11″, paper, 525 pages, 1134 illustrations, appendices, bibliography, errata sheet. 6,300 drachmas.

Every so often, at regrettably irregular intervals, a monumental study on ancient seafaring is produced which profoundly adds to the modern scholarship on the subject. J. S. Morrison and R. T. William's *Greek Oared Ships 900-322 B.C.* (Cambridge: Cambridge University Press, 1968) was such a book, and L. Casson's *Ships and Seamanship in the Ancient World* (Princeton: Princeton University Press, 1986[2]) is another. Now Belgian attorney Lucien Basch has joined this distinguished list with his evocatively-named book *Le musée imaginaire*.

The author will be most familiar to English-language readers from his long list of *Mariners' Mirror* articles beginning in 1966. In fact, few authors on ancient maritime affairs can boast bibliographies as long as Basch's, and few, if any can match his passion for the subject. This latest work is the distillation of two decades of that ardor, ten years in the writing.

Early in his introduction, the author sets forth his definition of this book: an essay on "naval architecture in the ancient Mediterranean, from the origins to the end of the Roman Empire, based upon iconographic sources." Quite rightly, Basch bases his study on the visual sources, which are inherently superior to the literary texts, but in his text (p. 38) he rejects out-of-hand the use of shipwrecks as resources, stating "One would like to, if the results of underwater archaeology were not themselves limited in many ways." This is curious, for of course there can be no better source for information on ships than the actual vessels themselves.

In a series of mini-essays in his first chapter, Basch discusses the early years of "naval archaeology" from the 16th to the 19th centuries AC. Along with a discussion of various early theoretical works, he places images from them alongside photographs of the original artworks. This antiquarian's approach to the subject provides an interesting perspective on nautical historiography. Today, most of these illustrations from old treatises are little more than curiosities, but in some instances they are the only extant records of lost or destroyed monuments.

The second chapter is devoted to Egyptian shipping, and it is very short. Beginning with the assertion that ancient Egyptian and Mesopotamian watercraft had little architectural impact upon mainstream Mediterranean developments, Basch then begins his chronological journey along the Nile with the pre-dynastic craft of the fourth millennium BC. He carries the discussion through timber sources, the origins of the sail and mast, international trade and navigation, allowing for some architectural and rigging cross-fertilization with the Mediterranean in the 16th century BC. In strict adherence to his self-imposed iconographical boundaries, the Cheops ship is relegated to a footnote, and the Dashur vessel is only briefly mentioned in the main body of the text. The rich pharaonic period gets only a page, and there is nothing at all for later Egyptian shipping. The Egyptian gallery in Basch's museum is off on a dusty corridor of its own, and the wise visitor will move through it without slowing to look too closely.

The next gallery, "The Near East: Origins in the Bronze Age," is also a small and dimly-lit room in the imaginary museum. This is unfortunate, for it was in ancient Mesopotamia that marine art began, with the world's earliest ship model around 5,000 BC. Few areas of the world have ever manifested lengthier or richer traditions in nautical iconography. Dugouts, the Gebel el Arak knife, the Sea People and Syrian coastal vessels each earn sections of their own, but where are the remarkable ritual, mythical and quotidian shipping scenes so dearly beloved by the ancient Sumerians, Akkadians and Assyrians? The chapter ends with an essay on the oriental aspects of Cypriote ships, as seen through boat models.

In the fourth chapter, "The Aegean," even the casual museum-goer will begin to slow down and inspect the contents more closely. Basch begins with the hypothesis that the earliest Aegean watercraft were likely skin and reed boats beginning in the seventh mil-

lennium BC. This is based on the finds of obsidian and burned animal bones from the Aegean island of Melos found at Francthi Cave, an archaeological site in the Peloponnesus on mainland Greece. In fact, Melian obsidian has been found in Upper Paleolithic levels at this site with an absolute data approximately 10,200 BC, according to its principal investigator. A very thorough discussion of the controversial Cycladic longboat follows, with the author dividing the type into two geographical categories corresponding to the islands of Naxos and Syros (the primary sources of evidence for this craft). For the Naxian watercraft, he advocates the high bow theory, while for the Syros type (illustrated by the Syros "frying pans"), he joins proponents of the low bow theory. This is a classic issue that will likely be resolved only by the discovery and excavation of an Early Cycladic shipwreck. Following this discourse is a fascinating essay on the infamous Dorak sword, complete with previously unpublished rubbings by James Mellaart of the ship friezes. The next section in this chapter, on Minoan shipping, is the largest single essay in the entire volume. Here, Basch focuses upon the ships depicted on sealstones, cataloging and illustrating every known example and proposing a taxonomy of eight distinct vessel types. The Thera ship fresco also receives a thorough treatment, with Basch suggesting an amalgam of several current theories on the geography and shipping displayed in this unique work. Thus, for example, for the "Admiral's House," he envisions an egocentric and theatrical owner who commissioned an artist to portray a mix of commercial and piratical expeditions to Egypt aboard gloriously exaggerated ships. Mycenaean and contemporary Cypriote ships also enjoy their own sections in this chapter.

The next chapter, "The Greek World from 1100 to 500," also occupies a large and pivotal gallery in the author's museum. Ships of the Geometric Period are carefully and extensively analyzed from the perspective that they represent profile portrayals (i.e., elevations). Therefore, according to Basch, two-banked warships are seen for the first time and in considerable detail. Certain favorite Geometric ships are given individual sections, and there is a fine catalog of Boeotian fibulae with ship engravings. The Archaic Period, the richest of all for Greek marine iconography, also is thoroughly documented and illustrated, with a geographical breakdown and discussion of regional similarities and variations.

Chapter VI offers Basch's views on the Greek *trieres* of the Classical Period, with a close look at the coinage and relief sculpture as primary evidence. There is an antiquarian's interest here, with various renderings of the Lenormant Relief (a primary source document) from 1861 to 1905.

Chapter VII, "Phoenicia," picks up the iconographic trail in the Near East where the third chapter ended, with the end of the Bronze Age. All the great maritime monuments are present and diligently accounted for (the Balawat Gates, the palaces at Khorsabad, Nimrud and Kuyundjik), and Basch also brings in the regional numismatic evidence, ship models and the minor (decorative) arts. The only major missing element known to this reviewer is an ivory from Fort Shalmaneser, Nimrud with an egyptianizing papyrus boat: the product of a remarkable Phoenician workshop whose output has turned up at other Assyrian sites as well.

At the outset of the eighth chapter, "The Hellenistic Period," the author makes a commendable effort to sort out the problems and chronology associated with the period's multiple-rower war galleys, the "fours" through the "forties." Several monuments, such as the base of the famed Nike of Samothrace, receive individual commentaries, and the naval graffitti at Delos are thoroughly collected and scrutinized. Four appendices address topics of particular interest to the author.

Chapter IX, "The Western Mediterranean before Roman Domination," covers marine iconography from Malta, Sicily, Carthage, the Villanovans, Sardinia, the Adriatic, the Etruscans and Italy to the south of the Tiber River. Representative images of shipping are present, including some previously unpublished examples from North Africa, but in this chapter Basch seems content to follow the mainstream of opinion for the most part. The catalog of Etruscan shipping is noteworthy, and the Louvre's highly detailed warship model from Ardea has its own essay at the chapter's end.

The tenth and last chapter, "Rome," begins with a lament directed not towards the paucity of ship representations, but to the vast numbers of images available for study. The abundance in fact is remarkable, for the Roman emperors evinced little interest in maritime or naval affairs except for troop and provisions transport and logistical support of the armies. Nonetheless, nautical imagery was vital to the empire's self-image and propaganda, and the period is astonishingly rich and diverse in topical material. The chapter is broadly divided into three segments respectively on warships,

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merchant vessels and the end of the western empire. Basch lets the major monuments speak for themselves, with exceptions for the Arch of Orange and Trajan's Column. There is a feeling that he is almost overwhelmed with the profusion of Roman ship-types and media, like the museum visitor who has spent the day gallery-hopping and is now looking for the exit, head spinning from visual overload. The 25-page bibliography at the end of the volume offers reference for the next trip.

But before departing, that foot-weary visitor must pass by the museum shop and pick up this extraordinary chronicle of his or her journey through the imaginary museum. Encyclopedic in scope and the most richly illustrated single volume on seafaring ever produced (ancient or modern), this book will be a classic for decades. A bargain at current exchange rates, it is available from the Hellenic Institute for the Preservation of Nautical Tradition, Al Papanastasiou 73, Kastella, Piraeus, Greece.

PAUL FORSYTHE JOHNSTON

Washington, D.C.

The Nagle Journal [:] *A Diary of the Life of Jacob Nagle, Sailor, from the Year 1775 to 1841*, edited by John C. Dann (New York, N.Y.: Weidenfeld & Nicholson, 1988). 9½" × 7½", superb introduction, 402 pages, numerous illustrations (many in color), several maps and charts, 2 appendices, notes, glossary and index. Hardcover, $27.50.

Jacob Nagle, born in Pennsylvania around 1762, lived a remarkable life as a sailor before he died penniless in Canton, Ohio in 1841.

He served in the Continental Army and Navy during the American Revolution, and was impressed into the British Navy in 1781. Seven years later, while in the British Navy, Nagle served aboard the flagship of the first fleet that sailed to Australia. He served under Lord Nelson in the Mediterranean during the 1790s and aboard ships of the East India Company that sailed to South America, China and India. Nagle, who was also stranded in South America for a decade, served 19 years in the Royal Navy by the end of his career.

What this remarkable sailor witnessed during his interesting life would have been lost had it not been for two things: First, he left a 161-page handwritten diary, recording his experiences. Then, almost a century-and-a-half after his death, this journal's editor—John C. Dann—spotted the diary in a New York autograph dealer's auction catalogue.

Dann, director of the Clements Library, learned about the Nagle diary while reviewing one of the catalogues that circulate periodically through museums and libraries for directors, curators and librarians to review. And recognizing the potential historical importance of the manuscript, he purchased it for the Clements Library for $1,800. By buying it from the dealer, the sharp-eyed library director probably kept its contents from falling into the hands of a private collector where it might have dropped out of sight for many more years, possibly forever.

Dann wanted the information within the Nagle journal to reach a large audience, so he sought a commercial press rather than a university press to publish its contents. And he selected an excellent press for the job. Weidenfeld & Nicolson of New York has produced a book from the old Nagle diary, reproducing some 70 images (including several maps and charts)—many in color. The illustrations, not originally part of the Nagle diary, have been selected from published works and collections of sixteen institutions, and placed appropriately throughout the book's text.

Dann describes Nagle's handwriting as difficult to read, written in eighteenth century style by a "close neat hand, averaging sixteen lines per line and forty-one lines per page." Although full of misspellings, meaningless punctuation, unnecessary capitalizations and run-on sentences, Dann adds that Nagle's diary reflects the author's "true gift for narrative composition and dialogue." As he explains, Nagle was unusually interested in what he witnessed, and possessed the ability to record small but important details—even decades later. Nagle, retiring from the sea in 1825, probably wrote his diary or autobiography within a three-year period between the late 1820s and 1830s, according to the book's editor.

Dann visited the National Archives in Washington, D.C., and the Pennsylvania State Archives to authenticate Nagle's service in the American Revolution. He also visited London four times between 1984 and 1987 where he studied records at the Public Record Office, the National Maritime Museum at Greenwich, and the India Office Library to authenticate Nagle's service aboard British vessels. As Dann explains, Nagle's name appears in muster books, pay registers and log books, and appears "on

every ship in the exact sequence narrated in the journal." Dann adds that "When Nagle describes a storm, a change in officers, sighting another ship, or the capture of an enemy vessel, his narrative is confirmed in the log books."

Dann has elected to present the diary practically verbatim, correcting only gross misspellings within brackets after they occur so that the reader can follow the narrative more easily. Using brackets, the editor has also clarified other words. Nagle's punctuation does not make any sense; so, Dann has corrected it to agree with Nagle's true sentence structure, and separated the text into paragraphs and chapters to break-up the manuscript's long, running prose.

Dann has devoted five years of research to the Nagle diary, carefully comparing events described by Nagle with the historical record to ensure the journal's authenticity throughout. The result is an interesting book that provides a credible record of a common sailor's life and a rare view of historic events.

As Dann, the diary's editor, says so well: Jacob Nagle was a "most uncommon, common seaman."

WILLIAM STUART MORGAN III

Williamsburg, Virginia

JOSEPH E. GARLAND, *The Eastern Yacht Club. A History from 1870-1985* (Marblehead, Massachusetts, The Eastern Yacht Club, 1989). Illustrated, xv + 333 pages, bibliography, index. $59.95.

Histories of important yacht clubs in America are all too rare. There are exceptions of course, such as Paul Shanabrook's *The Boston* (a history of the Boston Yacht Club 1866-1979) and John Parkinson's *History of the New York Yacht Club*, 2 volumes, written in 1975. It is therefore a particular pleasure for us to welcome this handsome volume by Joseph E. Garland which gives us a remarkable picture of the Eastern Yacht Club over 115 years of its existence. Its author, Joseph Garland, is well known to many of us as the author of a number of books concerning Boston, the North Shore and Gloucester and therefore has a real understanding of both the sea and the Marblehead and Boston locale essential to a proper view of the history of this yacht club.

The volume starts out after a brief preface and introduction with a survey of the background of yachting in America, beginning, of course, with George Crowninshield's *Cleopatra's Barge*, America's first private yacht and dealing with the first real regatta which took place off New York in 1845. Then we find a series of chapters tracing in detail the history of the Eastern itself. The first of these, dealing with the years 1870-1885, explains how the yacht club was founded in Boston and moved to Marblehead where its club house was opened in 1881. Interestingly enough by 1882 its membership had grown to 456 and its fleet of boats was composed of ninety-one vessels, consisting of forty-four schooners, twenty-nine sloops, eight cutters, one yawl and nine steamers.

The next two chapters deal with how the Eastern had an important role in defending the America's Cup with special emphasis on the part played in all this by Edward Burgess, whose designing skills helped make this defense successful. Then the next chapters, which deal with the period prior to World War I, explain how steam yachts increasingly were added to the club's flotilla, how deepwater races became important—especially to Halifax—and how the Eastern became involved in races in European waters off German and Spanish shores. Especially important to the future of yachting was the development of Herreshoff's universal rule which stabilized yacht designs for a number of classes of vessels.

After the war years, 1914-18, the Eastern returned to yachting on a grand scale again with innovations like the Marconi rig and the appearance of Nathaniel Herreshoff's S-sloop in 1919. These years saw the schooner *America* restored by the Eastern and presented to the Naval Academy in Annapolis. Then, and especially during the twenties, other changes took place; a number of races defending the America's Cup which proved successful and the admission of women skippers to the racing season of the club. Finally during the mid-thirties we find the Eastern again becoming important in the America's Cup defense with the appearance of the famous J-boats which Charles Francis Adams skippered with such skill.

Then the years between 1938 and 1943 saw Nathaniel Herreshoff dead at 90 and the Eastern's yachting interrupted by World War II. It also saw a series of changes. Perhaps the most important were the appearance of Ted Hood, whose sails and designs revolutionized yachting, and a great decrease in the size of yachts. Even more important was the increasing use of fiberglass which in a real sense democratized yachting in general, while at the same time the Eastern became

increasingly a club some of whose members were more socially inclined instead of primarily concerned with sailing their sleek vessels. However, annual cruises continued to be of vital importance, as did racing by younger members in and about Marblehead. As the Eastern entered its second century in 1979 the club, and especially its lady members, showed all the vigor of its early years.

Such is a brief survey of this remarkable history which helps to explain how yachting began, changed and flourished in the United States in general and the New England coast in particular. Everyone interested in yachting should own this book and enjoy its text and the wonderful photographs found in its pages.

ARCHIBALD R. LEWIS

Marblehead, Massachusetts

STEPHEN R. WISE, *Lifeline of the Confederacy* [:] *Blockade Running During the Civil War* (Columbia, S.C.: University of South Carolina Press, 1988). 6¼" × 9¼", 403 pages, 25 maps, 36 illustrations, 22 appendices, notes, bibliography, index, and a descriptive listing of more than 300 blockade runners. Hardcover, $24.95.

Yeeeeeeeeee haaaaa! A Rebel yell is an appropriate way to enthusiastically endorse Stephen R. Wise's *Lifeline of the Confederacy*. With this book's publication, the University of South Carolina Press has launched an excellent piece of research that will be appreciated by scholars and laymen alike—particularly those who have found recently how difficult it is to find a good book on the subject of blockade running during the Civil War.

President Abraham Lincoln declared a blockade of the Southern states on April 19, 1861, six days after the fall of Fort Sumter, and the Navy Department began to convert a small—and for the most part—obsolete number of ships to an effective naval force. All types of vessels were quickly purchased, and assigned to the Federal blockade before the large naval building program started on August 7.

The Confederate States of America had to export cotton and other goods for the supplies needed to sustain its war effort. Most Southerners assumed that European countries like England and France would recognize the independence of the Confederacy, while Southern leaders though cotton mill owners in those two countries would force their governments to continue trading with the South.

Queen Victoria issued a Proclamation of Neutrality shortly after the war began, "enjoining on all loyal subjects of the British Crown an attitude of strict neutrality, and solemnly admonishing them under pain of Her Majesty's displeasure to respect the Federal blockade." But to the North's displeasure and the South's delight, that proclamation was virtually ignored. Substantial Confederate and British capital was invested in blockade running, and many adventurous individuals—especially Englishmen—risked the occupational hazards of blockade running for the chance to make quick profits. Captains of blockade runners selected crews from the pick of the British seafaring community because they could offer good pay, and captains, themselves, could make enough to retire after six months of blockade running.

The Confederacy was able to supply its forces during the war due to blockade runners—revolutionary steam-propelled vessels, which frequently sped through the Federal blockading squadrons patrolling the Confederacy's 3,500 mile-long coastline. The North's enforcement of the blockade was compounded considerably because it had to set-up supply bases in enemy territory.

Blockade running direct from Europe was attempted early in the war, but a trans-shipment plan was soon implemented. Larger and slower vessels carried cargoes from Europe to trans-shipment points like Bermuda, Nassau, Havanna, and even Halifax, Nova Scotia. From those points, smaller but faster blockade runners shipped contraband cargoes to Wilmington, North Carolina; Charleston, South Carolina; Savannah, Georgia; St. Augustine, Florida; Mobile, Alabama; and Galveston, Texas.

Stephen R. Wise divides his book into ten chapters. He describes in chapter one the agrarian South's utilization of blockade runners rather than a merchant marine. And he includes a quote within this chapter by a Colonel Louis T. Wigfall, expressing a viewpoint Southerners commonly held shortly after the beginning of the war:

> We are an agrarian people; we are a primitive people. We have no cities—we don't want them. We have no literature—we don't need any yet. We have no press—we are glad of it. . . . We have no commercial marine—no navy—we don't want them. We are better without them. Your [England's] ships carry our produce. . . . As long as we have our

rice, our sugar, our tobacco and our cotton, we can command wealth to purchase all we want from those nations with which we are in amity, and to lay up money besides.

Wise says Southerners shared a "lively all-powerful faith in the doctrine of King Cotton, which they believed would sustain and protect their new nation," and he describes some of the problems they faced due to that faith. Southerners, failing to recognize that cotton was not by itself the most important factor in their commerce, failed to realize that their nation depended heavily on imports. Without industries to support the new-born Confederacy, the author states, the South was forced to establish effective commerce with European nations for manufactures and military supplies that it needed.

In chapters two through three, Wise describes the voyages of the earliest blockade runners, the capture of the largest cotton port in the world—New Orleans—on April 24, 1862, and the negative impact that the Louisiana port's loss had on the Confederate States. England and France had declared their neutrality the previous May, thereby recognizing the North's blockade of the South.

Wise in chapter four focuses on the situation in the South by the fall of 1862, vividly describing the shortages of munitions, raw materials, cloth, leather and food due to the losses of New Orleans, Memphis, Nashville and large portions of Tennessee to Union forces. The South could no longer expect England to intervene in its behalf by the fall of 1862, according to the author. But although cotton's use as an instrument of foreign policy had ended, its full value as a medium of exchange had just begun. Secretary of the Confederate States Navy Stephen Mallory dispatched agents to England, for example, authorizing them to pledge cotton for the building of warships.

Wise explains that the South was using bonds or cotton certificates to purchase vessels from the British by the summer of 1862, and he describes in chapter five events that followed. State governments in the South competed with the central Confederate government for trade, while private businesses running highly lucrative blockade-running firms, actually hurt the Confederate government's ventures.

Charleston and Wilmington were the South's two most successful blockade running ports. The author, describing in chapter six these coastal cities and their residents from the fall of 1863 onward, claims that the war had little effect on those who had money. But that the war hit the less affluent residents hard. Wilmington could not compare to Charleston as an urban city or commercial center, according to wise, but Wilmington's railroad connections and the two inlets leading into the Cape Fear River made the North Carolina town just as important to the Confederacy.

Although Wilmington became the most important blockade-running port of the South, Wise says that the city's importance as a port became a "mixed blessing"; a Yellow Fever epidemic raged through Wilmingtion by mid-September 1862, and the city experienced an invasion of sorts from personnel engaged in blockade running—personnel that Wilmington's prewar population found "distasteful and disruptive."

In chapters five through eight, Wise describes the individual firms—single ship ventures to large stockholding companies in Great Britain, Canada, Cuba and the South—that participated in the trade. He describes the different types of steam-propelled blockade runners that prevailed by mid-1862, the captains and crews that manned the vessels, the dangers they faced, and the rewards they received when they successfully completed a voyage.

He describes the Confederacy's establishment of a line of blockade runners, operated and owned exclusively by the War Department, and the Confederate Navy's construction of ironclads, raiders and torpedo boats from 1864 onward—a period when the South began to suffer severe losses due to combat, desertions and dwindling quantities of supplies and food. However, he emphasizes that the problem during 1864 was not just the problem of supply; delivering imported goods to Confederate forces at the front, particularly those no longer connected to former supply lines, was also a problem.

Wise says that the level of blockade running was greater on the East Coast than on the Gulf Coast, particularly after the fall of New Orleans. Blockade running into the South's Eastern ports was also more profitable, and British shippers preferred utilizing the English colonies of Bermuda and Nassau rather than Havanna, which was controlled by the Spanish. In detail, the author explains the advantages and disadvantages of specific Southern ports for blockade running, and events leading to each of their falls.

He explains in chapter nine the disastrous effect that the loss of Mobile and Atlanta in 1864 had on the Confederacy's finances. The price of cotton dropped and furthermore, says Wise, the South had trouble importing goods from Bermuda and the Caribbean because Yellow Fever spread among the islands. To avoid

quarantines in Bermuda or the Caribbean, Wise explains, some shippers instead used Halifax, Canada as a base of operations. This chapter is packed with information about the construction of blockade runners and raiders overseas, the increasing difficulty of running the blockade successfully, and the captures of Fort Fisher (guarding the approaches to Wilmington, North Carolina) and then Charleston, South Carolina. Offices in Bermuda and Nassau ceased to operate once Fort Fisher and Charleston fell, and the fate of Confederate forces was sealed, Wise concludes. Galveston, Texas, the author says, was the South's last blockade running port.

For those interested in statistics, chapter ten will be welcomed. President Andrew Johnson ended the blockade officially on June 23, 1865. So, having told the story of blockade running during the Civil War in previous chapters, Wise provides a wealth of figures that he has compiled and calculated in his research: Just "under 300 steamers tested the blockade," he notes. "Out of approximately 1,300 attempts, over 1,000 were successful. The average lifetime of a blockade runner," he calculates, "was just over four runs, or two round trips."

"Some 136 were captured and another 85 destroyed," he says in the lead sentence to "The Final Ledger," as he has appropriately entitled this chapter. Wise draws many conclusions within the pages that follow, determining quantities of imports and exports for various blockade running companies, their relative successes in the trade, and their last days.

No fewer than 22 appendices follow.

The author has conducted extensive research, and provided information that will assist researchers for many years. Wise has utilized collections of some 36 institutions from Massachusetts to Florida, Texas and Ohio; from Bermuda to the Caribbean and Great Britain. However, the majority of his research has been conducted in the South. By using unused newspaper accounts and manuscripts, admiralty court records, Vessel Papers of the National Archives, Quartermaster Records, consul dispatches, port records and the Wilmington Ordnance Account Book, he has produced a more detailed, up-to-date study of blockade running.

Images of blockade runners, and captains, pilots and owners of blockade runners have been reproduced in *Lifeline of the Confederacy* from private collections, sources like the *London Illustrated News*, and from the following institutions: Confederate Naval Museum in Columbus, Georgia; Confederate Museum, Charleston, South Carolina; and Maritime Museum of the Atlantic, Halifax, Canada. While many of these illustrations will be familiar to those who have researched in-depth the subject of blockade running, photographs of some of the captains, pilots and owners of blockade running companies will probably not be so familiar.

Stephen R. Wise is currently an instructor at the University of South Carolina, Beaufort, and director of the Parris Island Museum. With *Lifeline of the Confederacy*, Wise demonstrates the interest that many Americans—particularly those South of the Mason and Dixon Line—have in the subject of blockade running during the Civil War.

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WILLIAM STUART MORGAN III

Williamsburg, Virginia

PHOTOGRAPHIC PORTRAITS OF AMERICAN OCEAN STEAMSHIPS 1850-1970 (Providence, Rhode Island, The Steamship Historical Society of America, Inc., 1986). 11" × 8½", hard cover, 126 pages, 70 illustrations. $39.50.

If you want to have a glimpse of a very brief period of steamship history complete with wonderful photographs of 41 vessels which had a large impact on transportation during this time of great expansion in the United States, read "Photographic Portraits of American Ocean Steamships, 1850-1870", published by the Steamship Historical Society of America, Inc.

America was in a period of transition between 1850 and 1870. At the beginning, before the advent of the transcontinental railroad, the east and west coasts were completely dependent on marine transportation and steamboats were rapidly being built to take care of this important requirement. Wooden sidewheelers with tremendous paddles mounted high to accommodate rough seas were constructed mostly on the East coast not only for transatlantic crossing but capable of going around Cape Horn to serve in the Pacific as well. Iron sidewheelers, wooden propeller ships and finally iron propeller vessels were designed and built during this period.

A large number of steamship lines were formed, the most famous of which was the Pacific Mail Steamship Co., which eventually established regular runs not only on the West coast but served the public on regular runs from San Francisco to Yokohama and Hong Kong. Some unusual trips are also mentioned such as: the *Quaker City* which went on the first Mediterranean cruise from an American port in 1867; the *Santiago de Cuba* which the Union Army armed as a cruiser and blockaded the approaches to Wilmington, North Carolina and helped close the last Confederate port on the East coast in 1864 and 1865; the *Adriatic* which was chartered by the British during the Civil War to carry troops to Canada because of their concern over the "unfriendly stance" of the Union in 1861, whereupon she became stranded in the ice off Nova Scotia and had to spend the winter there; and the *Continental* which was engaged in the interesting project of helping "civilize the West" by carrying a shipload of women to Washington Territory (now Washington State) in 1865.

The most superb thing about this book are the wonderful photographs. Many of the illustrations are detailed deck scenes which really give a good idea of what life was like on these early steamboats. The Civil War was partly responsible for this because almost one half of the vessels described were involved with the war, and the Union Army Quartermaster Corps engaged a photographer to take pictures of chartered steamships in New York in 1864.

If you have an interest in history, you will be fascinated by this account of American steamboats from the smallest to the great trans-Pacific liners, which represented the "highest achievement of the great builders of wooden ships in America".

A. Van Santvoord Olcott, Jr.

Princeton, New Jersey

Frank Horner, *The French Reconnaissance. Baudin in Australia 1801-1803* (Melbourne, Melbourne University Press, 1987), xvii + 461 pages, illustrations, maps, index. AUS $47.95.

Australia's Bicentenary (of white settlement—or conquest—, not any particular ideological or political achievement) has been responsible for a massive renewal of interest in the early stages of the maritime history of the nation. While major maritime archaeological projects on ships such as the *Pandora* and the *Sirius* cast a spotlight on the fortunes, or rather misfortunes, of several of the Royal Navy vessels involved, much attention was also directed to the explorers and early navigators themselves. Not without controversy, the First Fleet re-enactment and other events stressed the birth of white settlement from British maritime interests and resources. In many publications—such as the splendid multi-media *Southland* by Jim Vellios and Trevor Jacob, produced by the Western Australian Ministry of Education (Perth, 1988)—the role of other people and nationalities, including Aborigines, Asians and Europeans, has been emphasized. It is within this new climate, which adds considerable weight to the new interpretation of Australia's history, in which besides the bush and the city the sea is seen as a third determinant force, that Frank Horner's book on Baudin has appeared.

Despite its considerable significance, the contribution of the French to Australia's maritime exploration has, even if not quite deleted from the historical record, remained relatively obscure—not in the least, because so many of the geographical names given by the French were subsequently replaced with British ones or were not consciously perceived as originating from French sources. A quick glance at any general map of Australia, however, will show a plethora of such names, ranging from D'Entrecasteaux Channel and Bruni Island near Hobart to the Recherche Archipelago, Hamelin Bay and Capes Mentelle and Naturaliste in southwestern Australia. By contrast, the French in Australia are mainly remembered for negative reasons, such as Bougainville's failure to break through the Great Barrier Reef and thus beat Cook in the race for eastern Australia, or, paradoxically, because many of their exploratory voyages incited both colonial and imperial governments to establish new settlements and thus secure more effective occupation of the continent's and Tasmania's coastline for the British Empire. The dramatic meeting of Nicolas Baudin and Matthew Flinders, on 8 April 1802, is customarily taken as no more than an ironic footnote to the tragic destiny of the latter, British, explorer.

The great scientific voyage of Baudin, which spanned the years from 1800 to 1804, has now been rescued by oblivion by this detailed and quite splendid book by Frank Horner. Basing his account on by far the most complete reading of primary sources yet (especially all still extant officers' logs and diaries kept during the long voyage), he is thus able to present an account which is not only meticulous in both its chro-

nological reconstruction of the voyage itself and its criticism of the published records of the expedition, but also as fair and judicious in its judgments as the surviving sources could allow any author to be. Moreover, there is a good, albeit in my opinion too succinct, evaluation of the scientific achievements of the expedition and an interesting discussion of the question as to why these achievements at the time received far less recognition than was due to them.

There have, probably, been few navigators who have had a worse press, even in other than their own countries, than Baudin who died on 16 September 1803 before his ship returned home. He never had the chance to defend himself against vilification by Napolean or the criticism of his conduct by the authors of the official account of the expedition, François Péron and Louis de Freycinet. There can be little doubt that the voyage of the *Géographe, Naturaliste* and, later, also the *Casuarina* was, despite all achievements, a very unhappy one. Almost right from the moment the expedition sailed from France, Baudin isolated himself from his officers, whose conduct at many occasions was more than questionable. In an appalling working atmosphere Baudin made many decisions which caused further criticism, controversy and dissent. He deviated from his intended course, spent too much time on some projects and not enough on others, and too easily allowed the ships of the expedition to be separated from each other. Worst, he perhaps was not always sufficiently meticulous in his surveying methods.

It is the great virtue and achievement of Horner in this book to provide the reader with all available viewpoints and opinions of the voyage's participants and, on that basis, to come to a thorough reassessment of Baudin, his leadership, decisions and overall performance. Horner presents Baudin warts and all, with all his defects but also all his qualities. As a result there can be no more doubt that the traditional, negative, image of Baudin must be discarded. This does not only apply to obvious *canards* such as the charge that Baudin copied Flinders' work without any acknowledgement, but more specifically also relates to controversial decisions, such as that in 1801 not to set his course directly for Van Diemen's Land (Tasmania), or his relationship with the scientists and officers on board. This, however, does not mean that no blame is to be attached to Baudin; on the contrary, as Horner never fails to point out, there were only too many instances where Baudin's character, his views on the objectives of the expedition or his relations with his officers and scientists can be severely criticised. Horner generally assesses Baudin's health record for the expedition positively, but—a rare oversight—he neglects to discuss any other aspects of the conditions and experiences of the ordinary seamen on board.

Horner's book deserves to take its place besides the great modern accounts of the 'age of scientific exploration', just as he gives Baudin his proper place amongst the explorers. The biographical element is a vital element in this process. Even if it may conjure up, implicitly, a perhaps too idealised view of the obvious contrast to Baudin's personality, that of James Cook, it is not difficult to agree with Professor Oskar Spate's view, "the central interest in *The French Reconnaissance* is this sad and tangled drama of a strong man caught and struggling in toils of intrigue which he could not understand, and so caught largely through his own flaws of character, and especially his utter lack of the personal touch; this is the stuff of tragedy." But Horner has also placed Baudin squarely and firmly within the context and the issues of his times, including especially the political and scientific interests and imperatives which led to the expedition being undertaken and which determined its course, character and objectives. On one point only there is no conclusive position: was there really no ulterior political/colonial/imperial motive, when Napoleon approved the enterprise?

The French Reconnaissance is elegantly written and handsomely produced; its price seems hardly excessive. The system of notes used in the book, however, is laborious and wastes space. Illustrations and maps are amply provided and, on the whole, add to the volume. On many maps, especially those dealing with periods when the ships became and were separated, indications of time with the ships' positions would have been useful. It should not have been impossible to add, as an appendix, a full listing of all geographical names given by the Baudin expedition and still in use. The French legacy is a theme which has hardly been touched upon in Australian historiography, but which, also in view of France's own Bicentenary in 1989, could well receive some stimulus. Frank Horner's book is an excellent introduction to it, just as it is a great contribution to our understanding of the process of Australia'a maritime exploration.

FRANK BROEZE

The University of Western Australia

JOHN MCKAY, *The Armed Transport* Bounty. London: Conway Maritime Press (Anatomy of the Ship), 1989. 120 pages, illustrations. $15.00.

SAM MCKINNEY, *Bligh: A True Account of Mutiny Aboard His Majesty's Ship* Bounty. Drawings by Nathan Goldstein. Camden, Maine: International Marine Publishing Co., 1989. x + 210 pages. Illustrations, appendices, selected bibliography. $22.95.

SVEN WAHLROOS. *Mutiny and Romance in the South Seas: A Companion to the* Bounty *Adventure*. Topsfield, MA: Salem House Publishers (distributed by Harper & Row), 1989. xi + 497 pages. Maps, bibliography, index. $22.50.

The "Mutiny on the *Bounty*" is sure to hold interest so long as literate mankind has the leisure to reflect upon a choice sea tale of psychological conflict, heroic endeavour, romantic escapism, and final retribution. Since the *Bounty* embarked upon its quest for breadfruit in 1788, the mutiny occurred in 1789, and the trial of the remaining prisoners finally was held in 1792, it is no surprise that these bicentennial years should witness a surge of Bligh and *Bounty* studies. Notwithstanding the vast literature on the subject (Wahlroos, in his work discussed below, lists 600 or so, including specialized periodicals such as *Studia Bountyana* and *Banksia*—Banks, for the non-devotee, was Bligh's scientist patron), it would seem that there is always more to be said.

To begin with the vessel itself: the armed transport *Bounty*, ex-merchantman *Bethia*. John McKay, Vancouver architectural draughtsman and modelmaker, already has one volume on *H.M.S. Victory* to his credit. In his study of the *Bounty*, the format is standard for the "Anatomy of the Ship" series: brief text followed by comprehensive expert drawings, some non-scale isometric representations, but mostly done to 1/96 scale for hull, decks, boats, and sail and rigging plans, and 1/16 for spars and other smaller details. Unlike most vessels from the same era (*Victory* excepted), a *Bounty* study can be enhanced, as has been done here, with photographs of the 1962 and 1979 movieland replicas. McKay's book above all is a modelmaker's delight (and for the truly serious, he provides an address through which large-scale plans may be obtained), but it makes an interesting study for the average ship enthusiast who simply wants to know what *Bounty* looked like. Oddly enough, the one feature which remains unknown, since it is not noted in the Admiralty plans upon which the book is based, is the color scheme in which she was painted. A handsome dustjacket illustration, however, provides the best speculative representation.

McKay's contribution would be welcome at any time, bicentennial or not. Sam McKinney's book, on the other hand, seems designed more as an anniversary offering, though no such claim is made for it in the text or on the jacket. The title, however, is confusing, implying both a study of the mutiny and a biography of Bligh, *Bounty*'s commander. The word "true" in the title, moreover, along with the several "action-packed" drawings by Nathan Goldstein, might imply that this is a book meant for a juvenile or young adult audience. In fact, it is a solid review of the *Bounty* story by an Oregon sailor-journalist and outdoorsman (a founder of the Northwest Outward Bound School), based on such contemporary logs and journals which survive—above all that of Bligh himself. McKay rightly points out that published versions of these journals are out of print and increasingly hard to come by.

Bligh is a readable account, with no particular axe to grind, although it tends to pay more attention to Bligh's post-mutiny small boat sailing triumph than to the mutineers' subsequent fate. While probably the book will add little to the lore known to readers of *Studia Bountyana*, it is a very serviceable rendering for the average reader. Perhaps the book's best contribution, however, stems from the fact the McKinney has wisely relied heavily for general background and discussion of such topics as Royal Navy discipline upon N.A.M. Rogers' recent magisterial work, *The Wooden World, An Anatomy of the Georgian Navy* (Annapolis: Naval Institute Press, 1986), a highly-recommended starting place for anyone curious about naval affairs in that era. Serious study of Rogers has set the stage for McKinney's even-handedness, an approach which this multi-strand story surely deserves.

In *Bligh*, the publishers have clearly intended to produce a book worth keeping, with illustrations printed in black and blue, wide margins, good-sized print, and a handsome format overall. To one who has just studied McKay's anatomical study, however, the illustrations present an interesting opportunity for quibbling over details. For example, the drawing of "flogging Matthew Quintal" (p. 33), has Quintal tryced up before the mizzenmast (it must be the mizzen, for the topsail sheet bitts shown were so arranged

only on that mast). But, even assuming the sheets themselves had been secured elsewhere, the bitts surely would have interfered with any swing of the cat—as indeed can be seen in the more accurate representation a few pages later (p. 41: "a loose tarpaulin on the ship's launch"). An untilted depiction of two hands wrestling the wheel in a gale (pp. 38-39), on the other hand, badly misrepresents the tiller housing, mounts the swivels (normally kept below until needed, and surely not carried by choice in mid-storm), adds a nonexistent locker of some sort against the starboard quarter rail, and completely omits both the stern flag locker and lanterns. It is perhaps unfair thus to fault Goldstein's efforts, for on the whole he has drawn the *Bounty,* but *Bounty*-buffs are sure to spot the discrepancies, particularly if they have McKay's work in hand. Still, overall, McKinney's book is a worthy introduction to the *Bounty* adventure.

Sven Wahlroos, a professional psychologist from Los Angeles' San Fernando Valley, and author of *Family Communication* and *Excuses* in that professional field, is another victim of *Bounty* fever, in this case infected while a boy in his native Finland. Wahlroos is a sailor, however, with many voyages to his credit, including, according to the dust jacket of *Mutiny and Romande in the South Seas,* visits to all the locations connected with the story, not excepting remote Pitcairn Island—and he knows Tahitian into the bargain.

Once again, it is difficult to judge from the title of the book just what the reader is likely to encounter. Actually, Wahlroos' contribution is in three parts. Part I, "A *Bounty* Chronicle," is a month-by-month recitation in some 200 pages of the events connected with the whole episode from November of 1787 to September of 1793. Since each month's account begins with a fresh right-hand page, and not all that many months were really eventful, there is much blank space in this section (to be precise, 19 blank pages and 33 with less than one-half page of print). Worse, while the chronicle is reasonable enough up to the mutiny, at that point it makes much more sense—as many an author has already discovered—to follow separately each element (Bligh, the mutineers, the refugees on Tahiti, the pursuers from England). By the time the story's climax is reached, it is more confusing than helpful to sort it out chronologically in this fashion. Least satisfactory of all, each month must have its entry, so, confesses the author in his introduction (p. 4), "where there is not too much to report in a certain month, I may have focused on some aspects of the story that are usually not covered in the literature." "Not covered chronologically" would be more accurate. It is not that some of the author's insights are not valuable, for they are; for example, he may well be the first professional psychologist to write on the *Bounty*. It is at least a different approach to read that Fletcher Christian was suffering from a "brief reactive psychosis" at the time of the mutiny (p. 61). But the reader will find little guidance in the volume to the fact that this analysis is concealed under the heading "April, 1789"—the sort of entry which explains why the chronological format is not altogether satisfactory.

"*Bounty* historians" (a term much-used in this volume) may find more useful part II, "A *Bounty* Encyclopedia" (237 pages, none of them blank). Although the criteria for entry selection are nowhere given, basically this is a compendium of participants, islands, ports, vessels, and the like which feature in the story, to which are added a number of Tahitian names and terms, presumably because they feature in the journals of Bligh and others. Inevitably there is a certain amount of subjectivity in any such collection, and Wahlroos seems more inclined to focus upon Fletcher Christian and his followers than upon Bligh, though his ultimate conclusion (p. 203) is that the mutiny was caused by the interaction of Bligh and Christian (fair enough), and that there would have been no mutiny at all had Christian not been on board (demonstrably unprovable). On the whole, if both Parts I and II are taken together, the treatment is comprehensive enough—but inevitably readers will turn up points upon which they could use further enlightenment. Why, and in what form, for example, were the *Bounty* crew tattooed at Tahiti? Bligh noted that most were tattoed: had they tattoos already? If so, did they deem Tahitian additions to be anything new and unusual? It might be added that Wahlroos, like artist Goldstein, would benefit from a study of McKay's renderings: the taffrail flag locker, for example, was not "Bligh's private privy" (p. 120).

The last section of Wahlroos's book is a comprehensive bibliography, covering some 30 pages. The author does not claim comprehensiveness, and the section is titled, "A Sample of Literature on the *Bounty* and Related Subjects," but it is a useful list. Inevitably, here, too, there are some lapses. Publishers, for example, are listed only occasionally according to some inexplicable principle. The main works are here—Nordhoff and Hall, Rutter, Beaglehole and so

on, but caution is recommended on the more obscure references. G. Pears, "Journal kept on *H.M.S. Blossom* . . . manuscript, London: British Museum," is actually the journal of Lieutenant George Peard, not Pears, and it has been edited by Barry Gough and published in a fine edition by the Hakluyt Society in 1972. In short, provided the reader can manage to stomach the last sentence of the introduction ("So, mate, set sail with me and let us embark on an expedition two hundred years back in time, a voyage that will lead us to Adventure!"), this "companion" has something to offer, but in an imperfect format.

Taken together, these three books can give any reader a good overview of the mutiny and its aftermath (McKinney), provide added detail on people and places (Wahlroos), and thoroughly illustrate the vessel concerned (McKay). *Bounty* specialists may be disappointed in Wahlroos, but take delight—along with non-specialist modelmakers—in McKay's contribution. One conclusion, however, seems safe: the last word has not been said on Bligh, Christian, or the "Mutiny on the *Bounty*."

BRITON C. BUSCH

Colgate University

SEEBERT J. GOLDOWSKY, *Yankee Surgeon: The Life and Times of Usher Parsons 1788–1868* (Boston: Francis A. Countway Library of Medicine, 1988). 6″ × 9″, xvi + 450 pages, illustrations, index. $24.50

The details of Usher Parson's career as physician and surgeon in nineteenth century New England provide an excellent overview of the best available medical training and practice of his times. His education included a basic apprenticeship, a preceptorship with the most distinguished physician in Boston, wide clinical experience in the Navy, a formal course of medical studies at Harvard, and extensive exposure to the finest medical minds and facilities in Europe. Although he made no original contribution to the advancement of medical knowledge, his peers respected him for his dedication and skills. Maritime historians will be especially interested in the details of Usher Parson's career as a naval surgeon from 1813 to 1823. Dr. Goldowsky, a former practicing surgeon in Providence and Editor of the *Rhode Island Medical Journal*, has written a detailed and interesting biography based on letters, naval diaries, Parson's *Day Book of Practice*, and on Dr. Charles Parsons' life of his father, *The Memoirs of Usher Parsons*.

Dr. Parsons came from a prosperous rural family in Maine. Ambitious, even in adolescence, he viewed higher education, and medicine in particular, as a way to get off the farm. At the age of nineteen he took the traditional first step toward a medical career with an apprenticeship in the office of a local practitioner. After a few years of study interrupted by stints of teaching, he joined the household of Dr. John Warren in Boston as one of several private medical students. John Warren, a member of a distinguished Boston medical family, had had extensive military medical experience taking care of casualties of the American Revolution. His skill and personal instruction in anatomy and surgery were to have a profound influence on Usher Parsons' career. One year later in 1812 the Massachusetts Medical Society "approved and licensed" Usher Parsons as a "Practitioner of Medicine." This certificate of competency was all he needed to start practice. In early nineteenth century New England medical schools were a luxury, and most aspiring physicians, like Parsons, learned by hands-on experience in a variety of preceptorships.

The young physician obtained a commission as Surgeon's Mate in the new United States Navy. Assigned to Oliver Hazard Perry's flagship, *Lawrence*, he was the only medical officer fit for duty in the entire squadron during the Battle of Lake Erie on September 10, 1813. Parsons' account of the battle, fortunately quoted in detail, gives a vivid picture of a surgeon's activities during a naval engagement. As the crew assumed their battle stations, Parsons set up his instruments and operating table. The wardroom, above the water line, became the cockpit, and cannon balls crashed in, killing some men even as Dr. Parsons attended to their wounds. The six men assigned to help him were ordered up on deck one by one, and Parsons felt himself alone. Without assistants he could only give emergency and supportive care, although he did manage to perform six amputations on mortally wounded men. He tended the rest by controlling the bleeding with tourniquets or ligatures, administering opiates, and splinting limbs. On the following day Parsons performed the necessary amputations, tended to the fractures, lacerations, and contusions, and trephined the skull of the quartermaster in order to treat a compound fracture. He also took care of the wounded on the other ships of Perry's victorious squadron. Showing an unusual regard for good postop-

erative care, he placed as many of the invalids as possible on the deck under awnings to escape the fetid air below decks, and he obtained quantities of fresh food from Ohio farmers. Thanks to his meticulious care, surgical skill, and perhaps to the fortuitous delay of the amputations after the shock of trauma had stabilized, there were only three fatalities among the 100 wounded who survived the battle. It was a remarkable achievement for a newly trained surgeon's mate who had just turned twenty-five.

Parsons' reliability, skill, and diligence exhibited while serving on the Great Lakes had attracted the attention of Commodore Perry. Perry, granted the privilege of naming his own officers, picked Parsons, now Surgeon, to run the medical services on the newly commissioned frigate *Java*. In 1816 *Java* sailed to the Mediterranean to keep an eye on the Dey of Algiers whose ships were preying on American commerce. Parson's log, *Day Book of Practice*, shows the assortment of conditions presented to a ship's surgeon. Besides fevers, dysentery, pleurisy, fractures, lacerations, and contusions, Parsons also had to treat gonorrhea and "lues venerea" acquired on shore leave. Scurvy was not a problem, for the United States Navy had made citrus fruits a standard issue in 1812. When the main topmast broke off with ten men aloft in a storm off Portugal, Parsons once again had to rely on his surgical skills to relieve the men crushed in the debris.

The most serious medical crisis faced by Parsons was an epidemic of smallpox which broke out on the return voyage. Perry, with remarkable knowledge of the epidemiology and prevention of a disease which could cripple his company, had ordered his original crew vaccinated before departure. However a new contingent of seamen taken aboard at Minorca for the passage home had not been protected against the disease, then endemic in the Mediterranean. When one of these men came down with smallpox, Parson found eighteen who admitted they were susceptible. He attempted to vaccinate them with cowpox but the preparation had lost its potency, and he was forced to take the riskier course of inoculation with the smallpox virus. All developed mild cases as hoped. Eighteen others, who had avoided inoculation came down with the disease in its most virulent form. Four of these men died. On this voyage Parsons also lost three patients with "pulmonary consumption."

Once ashore in 1817, Parsons obtained leave from the Navy to study medicine at Harvard. After attending lectures in anatomy, surgery, theory and practice, chemistry, materia medica, and midwifery, he received the degree of Doctor of Medicine in 1818.

When the Navy recalled him and ordered him to the U.S. frigate *Guerrière*, he was able to amplify his medical education. His duties on the Mediterranean cruise being light, he had time to visit hospitals in Palermo and Naples. A mild "liver complaint" enabled him to get more leave, and he left the ship at Leghorn for a Grand Tour of medicine. He visited hospitals and clinics in Italy, France, and England, met with the most distinguished physicians of the country, attended rounds, and observed operations. It was obvious he was looking beyond a lifetime career in the navy.

He began his transition to civilian life by asking for and receiving an assignment to the Marine Barracks in Charlestown when he returned to the United States in 1820. While stationed there he drew on his naval experience to write a handbook, *The Sailor's Physician*, a detailed guide for the care of illnesses of "seamen and passangers in merchant vessels" who did not have access to a physician. The book, later called *Physicians for Ships*, was immensely popular and went through four editions. Although he resigned from the Navy in 1823, he kept up with his Navy colleagues for the rest of his life. He worked hard for the abolition of flogging in the navy, a punishment fianlly terminated by act of Congress in 1850. He never tired of describing his experiences in the Battle of Lake Erie, and he participated enthusiastically in all commemorations of the victory.

The second half of *Yankee Surgeon* deals with Dr. Parsons' career as professor, medical practitioner, surgeon, medical writer, and local historian and antiquarian in Providence, Rhode Island. His medical education, thanks to his ambition, social contacts, the United States Navy, and more than a touch of opportunism, had been the very best available. It is not surprising that his career was a distinguished one. Although his therapeutics were limited to the standard nineteenth century approach of polypharmacy, bleeding and purging, his surgical skills in those preanisthetic days were remarkable.

Dr. Goldowsky's book gives a clear and detailed picture of Parsons' medical career. Although he states in his introduction that he wishes to flesh out "the somewhat colorless" figure found in Charles Parsons' life of his father, he does not succeed in doing this. We learn a great deal about Usher Parsons' medical skills but nothing about his personality. What were his feel-

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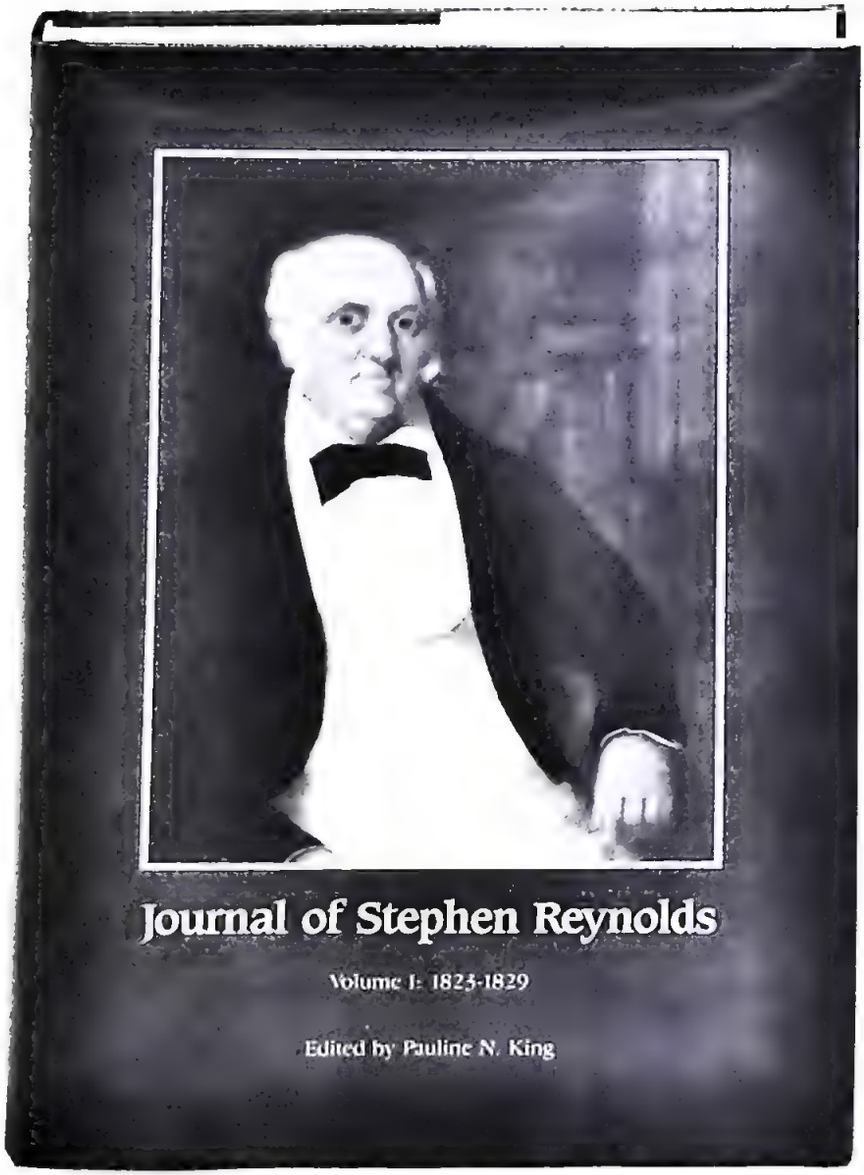

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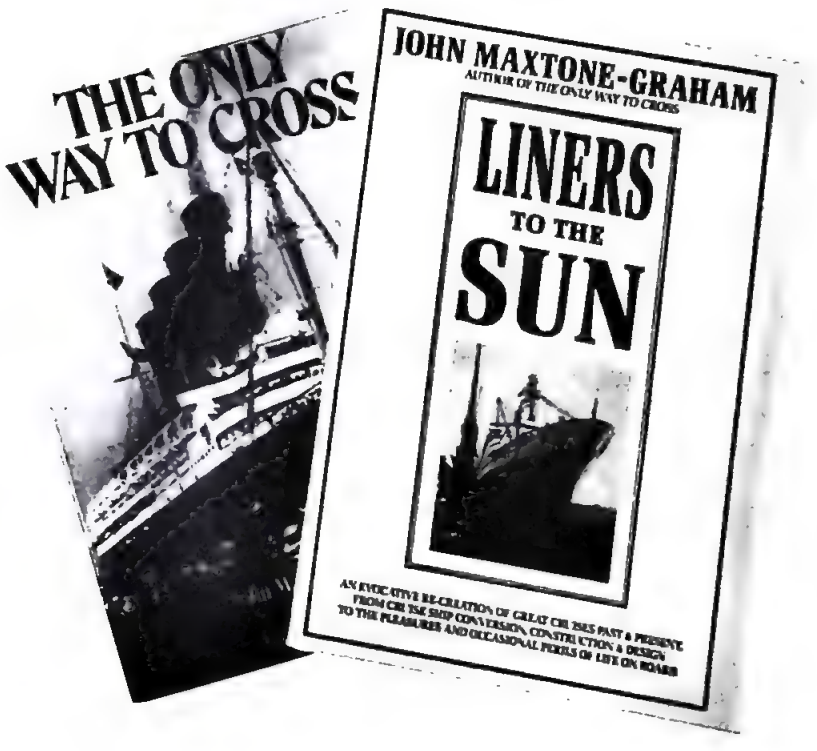

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To be eligible for the annual awards, contributors must have fulfilled all publication requirements as stated in *Notes for Contributors to The American Neptune*. All articles published in either the preceding winter, spring, summer, or fall issue of the journal are automatically eligible.

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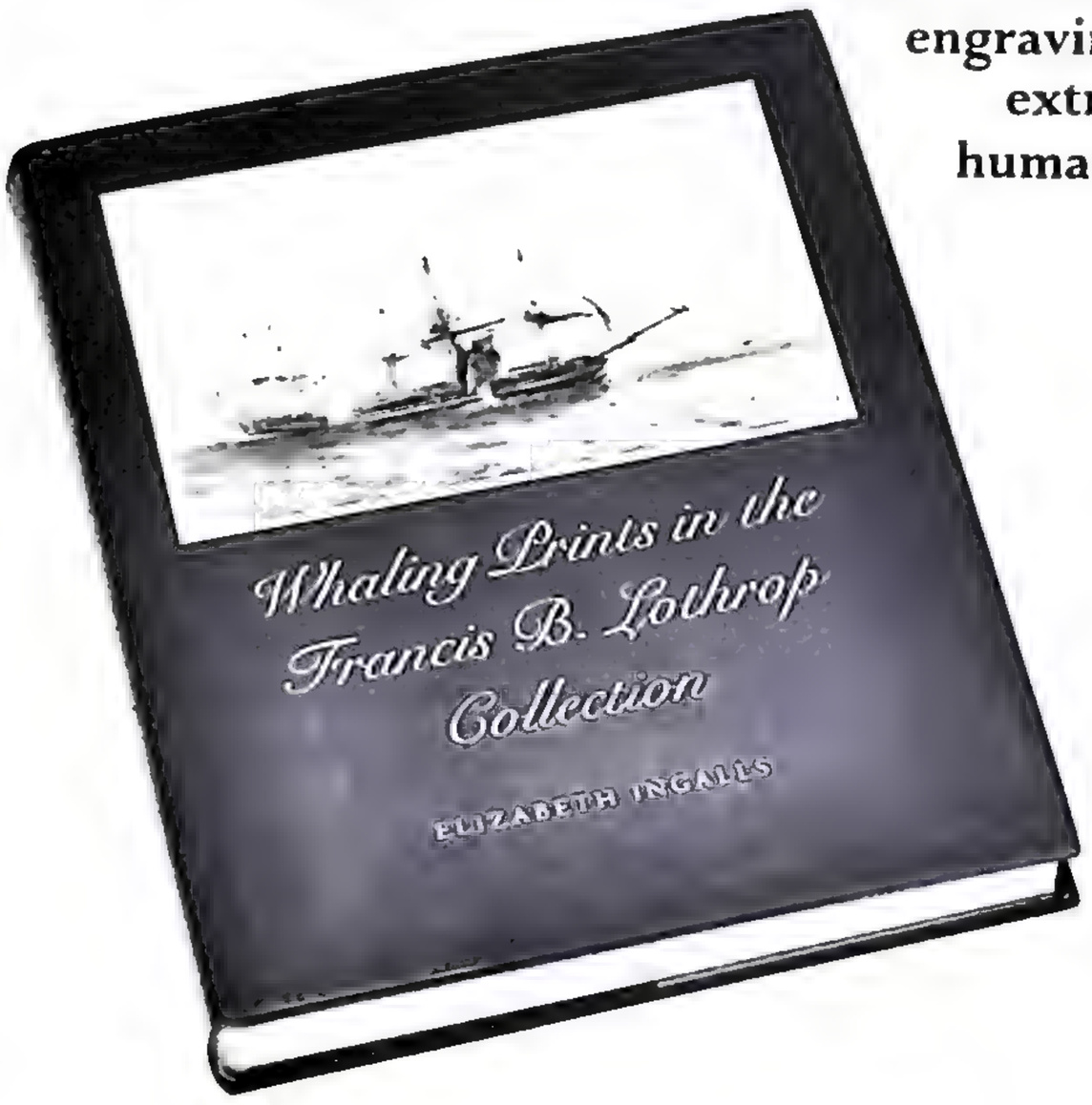

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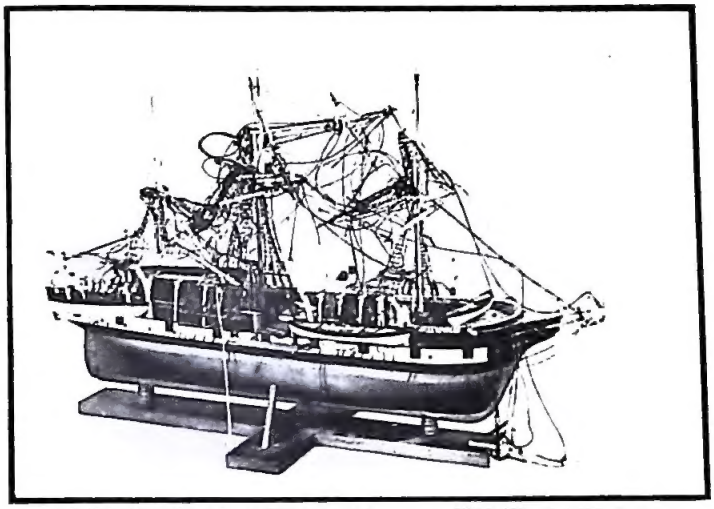

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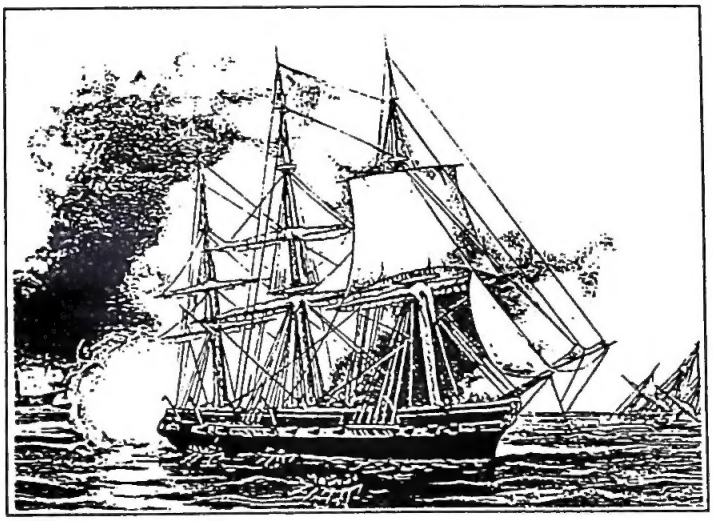

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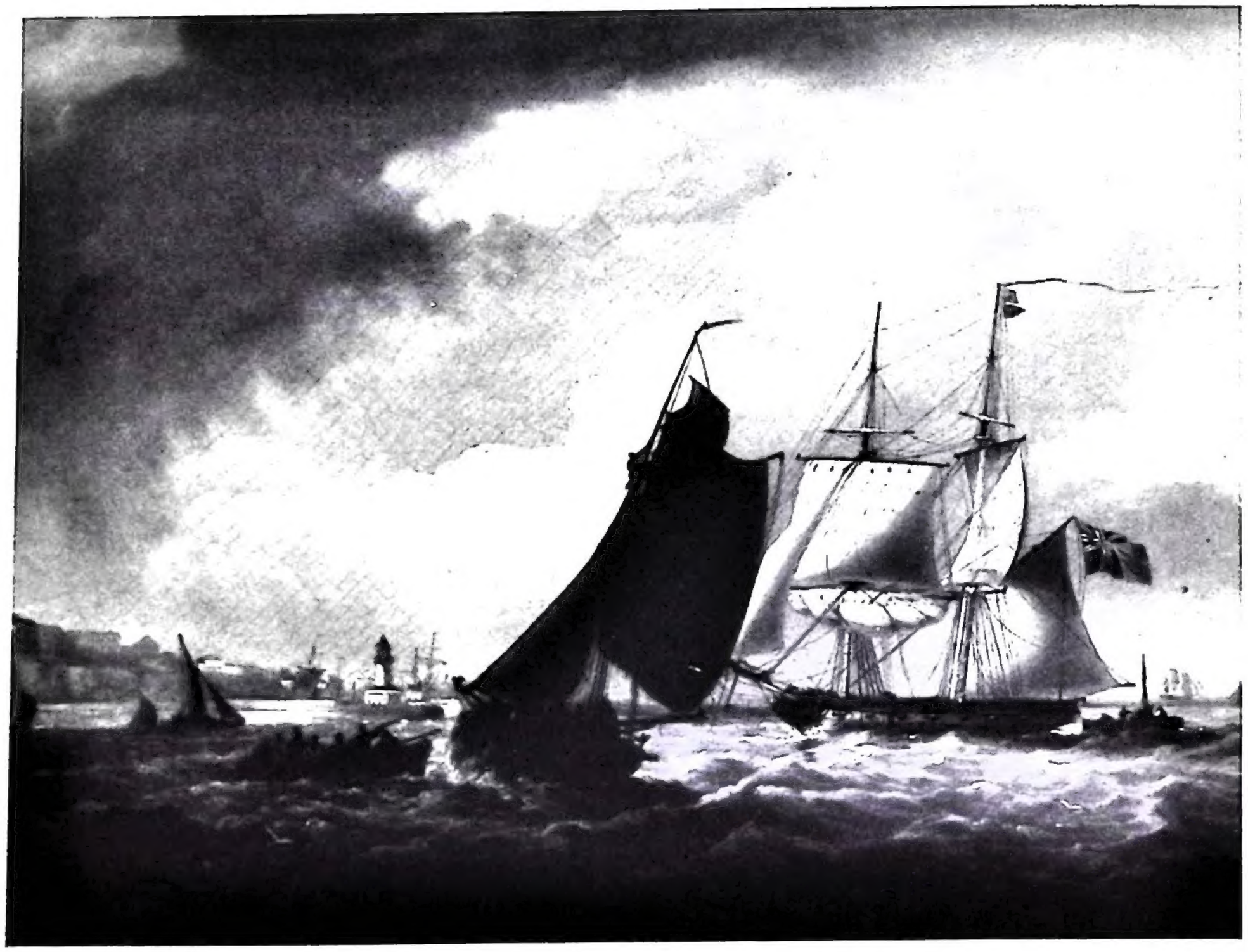

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